DOCUMENT RESUME

ED 198 487 CS 005 876

AUTHOR Robertson, Margaret Burnett
TITLE The Effect of Sex-Typed Reading Material on Reading Interests and Comprehension in 1967 and in 1979.
PUB DATE Sep 80
NOTE 126p.; M.Ed. Thesis, University of Saskatchewan.

EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS Comparative Analysis; Elementary Education; Grade 5; Intermediate Grades; Longitudinal Studies; *Reading Comprehension; *Reading Interests; *Reading Materials; *Reading Research; *Sex Differences; *Sex Stereotypes

ABSTRACT

A study was conducted to determine the stability of the effect of sex-typed reading material on the reading interests and comprehension of fifth grade boys and girls. It involved a direct replication of a 1967 study so that a comparison of data from the 312 subjects of that study could be made with the data from 374 subjects of 1979. Reading material, equated for readability, was designed with male or female characters occupying male or female type occupational roles. Interest in the reading material was measured by a six-point like-dislike scale. Comprehension was measured by a 50-item deletion cloze test for each story. Each subject read and responded to four stories. Results indicated that (1) fifth grade boys' and girls' interests in sex-typed reading material are different and exhibit some stability across time; (2) boys' interests are determined by the occupational role of the story character and girls' interests are little affected by sex-typing; (3) boys' comprehension scores are little affected by sex-typed reading content and girls' comprehension scores are superior for that reading content designed to appeal to girls; and (4) the varying effects of sex-typed reading material on the interest and comprehension of boys and girls suggest the relationship is different in boys and in girls. (HOD)

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THE EFFECT OF SEX-TYPED READING MATERIAL ON READING INTERESTS AND COMPREHENSION IN 1967 AND IN 1979

A Thesis

Submitted to the Faculty of Graduate Studies

in Partial Fulfilment of the Requirements

For the Degree of

Master of Education

in the College of Education,

University of Saskatchewan

by

Margaret Burnett Robertson

Saskatoon, Saskatchewan

September, 1980

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ACKNOWLEDGEMENTS

The writer wishes to thank her advisor, Dr. Howard A. Klein, and committee members, Dr. Millicent Marshall and R. A. Yackulic, for their advice and guidance during the development of this thesis.

The writer also wishes to acknowledge the assistance of the principals, teachers and students of the Saskatoon public schools who cooperated with the author in carrying out this research.

ABSTRACT

This study sought to determine the stability of the effect of sex-typed reading material on the reading interests and comprehension of grade five boys and girls across 12 years. It involved a direct replication of an earlier study so that a comparison of data from the 312 subjects of 1967 could be made with the data from 374 subjects of 1979.

Reading material, equated for readability, was designed with male or female characters occupying male or female type occupational roles. Interest in the reading material was measured by a six-point like-dislike scale. Comprehension was measured by a fifty-item deletion cloze test for each story. Each subject read and responded to four stories.

Analysis of the data collected to determine the stability of the results of the early study produced findings which led to the following major conclusions:

1. Grade five boys' interests and grade five girls' interests in sex-typed reading material are different and exhibit some stability across time.

2. Grade five boys' interests are determined by the occupational role of the story character.

3. Grade five girls' interests are little affected by sex-typing in the reading materials.

4. Grade five boys' comprehension scores are little affected by sex-typed reading content.

5. Grade five girls' comprehension scores are significantly superior

for that reading content designed to appeal to girls.

6. The varying effects of sex-typed reading material on the interest and comprehension of boys and girls suggests that the relationship between interest and comprehension is different in boys and in girls.

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CHAPTER I

THE PROBLEM AND THE DESIGN

The problem

The purpose of this study was to determine whether children's interest in and comprehension of sex-typed reading materials were similar in 1979 to those of 1967. The focus of the study was on differences in fifth grade boys' and girls' interests in the reading material and differences in their comprehension of that material.

Klein (1968) examined the effects of sex-typed reading material on the interest and comprehension of grade five children in Saskatoon, Canada. That 1967 study was replicated in 1979, in the same city, so that 1979 findings could be compared and contrasted with the findings from the 1967 study.

Klein sought to examine differences between interest and comprehension of boys and of girls by eliciting responses to reading materials designed to appeal either to boys or to girls. The reading materials were equated for readability level, length, and mode (descriptive narrative). The occupations and sex of the main characters of the reading material provided the independent variables by which varying interests and comprehension of boys and girls could be described and compared.

Klein found that boys and girls reacted very differently to the same reading matter. Boys' reading interests were determined by the occupation of the main character rather than by the sex of that character. Compared with this, girls' preferences were for female characters regardless of their roles in the story. The average

comprehension scores of boys and of girls were similar but the distribution pattern of their scores differed in relation to the nature of the reading materials; boys' scores were consistent and similar for all kinds of reading materials but girls scored significantly higher on their preferred reading material compared with their performance on least liked material.

This present study was undertaken to determine whether a similar distribution of interests and comprehension scores for boys and girls obtained in 1979.

The specific questions asked were:

1. Are fifth-grade boys' interests and girls' interests in sex-typed reading material similar in 1979 to those of 1967?
2. Are fifth-grade boys' comprehension scores and girls' comprehension scores for sex-typed reading material similar in 1979 to those of 1967?
3. Are the effects of interest on comprehension in 1979 similar to those of 1967?

Definition of terms

Expressed interest — preference for, or liking of story or story characters at a given time.

Interest scale — an instrument designed to measure the strength of interest, or preference for, or liking. In this study, one measure of interest was obtained from a six-point like-dislike scale.

Comprehension — the number of words correctly replaced in a deletion cloze type test of fifty items.

Sex-typed content -- content with which the reader of a particular sex could identify because of the sex of the main character and the occupation followed by that main character.

Male sex-typed content -- content in which the male character occupied a role in which men have traditionally formed the great majority of workers.

Female sex-typed content -- in which the female character occupied a role in which females have traditionally formed the great majority of workers.

Delimitations

1. The sample was restricted to grade 5 children in the Saskatoon Public Schools.
2. Predictions based on a comparison of 1967 and 1979 data were restricted to grade 5 children.
3. Only data gathered from pupils who completed all phases of the testing were used.

Background to the problem

Between 1967 and 1979 there has been a period of cultural transition where career opportunities for both men and women have changed. The changing opportunities have been particularly well documented for women who, since the early 1970's, have gained access to traditionally male-held appointments; for example, women recruits in police forces, women pilots in Air Canada, and women speakers in the Canadian Houses of Parliament (Status of Women, Canada, 1979). Attitudes of young people now making career decisions are changing to include a wider range of choice for both sexes (Jenks, 1976).

There has, moreover, been a proliferation of popular writing in the last decade as a result of the 'Women's Movement.' A whole range of opinions is reflected in this from the androgenous (Greenberg 1978; Bem, 1974) to reassertions of the traditional dichotomous division of the sexes (Darrow, 1970).

Krichmar (1977) was instrumental in compiling an annotated index of publications, The Women's Movement in the Seventies. In this he included English language publications, dated between 1970 and 1975, from almost one hundred countries. While his index was not exhaustive, it included more than 8,600 entires. Of these, 65% were originally published in the United States, with the next largest contribution, 6%, coming from the United Kingdom. This reflects the growth of concern about women's roles on the North American continent.

The quantity, and to some extent the quality, of writing about women was also evidenced in the establishment of Women's Studies Abstracts in 1972. Collision (1972) described these abstracts as

> 'necessarily a work of the seventies for until the beginning of this decade only a handful of colleges were offering courses which examined women and their relationship with the world. By the fall of 1971, over 600 courses could be listed.' (p. 1).

In literature and research in Education there have been many papers and articles on sex stereotyping. Some focus on curricular requirements, (Saario, Jacklin, and Tittle, 1973; Levy and Stacey, 1973), some on school structure and organization (Levy, et. al., 1973), others on testing (Saario, et. al., 1973), while a vast number have quantified the inequalities of representation of males and

females in instructional materials (Saario, et. al., 1973; Schnell and Sweeney, 1975). Kingston and Lovelace (1978) reviewed some 78 studies with this last focus while Pugliese and Chipley (1976) compiled an annotated bibliography of 33 studies of this kind.

In Saskatchewan, the wide distribution of 4,500 copies of Sex Bias in Primary Readers (Saskatchewan Human Rights Commission, 1974, 1977) has possibly made teachers in that area aware of the inequalities of representation of men and women in basal reader material.

Changes in sex-stereotyping in school reading materials have not been so well documented. Studies by Marten and Matlin (1976), Kyle (1978), Graebner (1972), Schnell and Sweeney (1975), indicated that some changes have taken place but that they are minimal. Examination of the numbers of male and female characters in a grade five basal reader series (Allyn and Bacon, 1963, 1968, 1978) widely used in Saskatchewan showed that in the 1963 and 1968 editions the ratio of males to females was 2.9:1 and in the 1978 editions the ratio was reduced but still an unequal 2.2:1.

In this decade of social change there has been a dearth of literature describing how children's perceptions of sex-roles may have changed either as a result of changes in their environments or because of possible changes in teachers' expectations. Children's exposure to more diverse roles for men and women may reflect in different reactions to sex-typed reading materials compared with the reactions of children twelve years ago.

The purpose of this study was to determine the stability or instability of children's interest in and comprehension of sex-typed

material in this decade of social change relative to the patterns of interest and comprehension described twelve years before.

Design

Kirk (1968) defined replication as "the collection of two or more observations under a set of identical conditions" (p. 555). In this study, the observations were the data from the 1967 experiment and the data from the 1979 experiment while the identical conditions were obtained through a replication in 1979 of the 1967 study.

Sidman (1960) classified replications into two types - direct and systematic: direct replication is an exact repetition of procedures, either with new subjects or with the same subjects under each of several experimental conditions while systematic replication is the replication of a study with slight modification of the independent variable. This study involved a direct replication of Klein's 1967 study.

Sidman pointed out that repetition of large population and group-based studies were rare in psychological experiments. He claimed that "such repetition would indeed help to establish the reliability of the central tendency" (p. 74). Replication studies are also uncommon in Educational research. Cronbach and Suppes (1969) have referred to a tendency to stress novelty in Educational research and suggested that repetition of an inquiry in education may be even more important than in the exact sciences in which phenomena can be better controlled. Shaver and Larkins (1973) questioned the assumption that worthwhile graduate study must be original when they referred to this view as "part of a myth" (p. 1252).

Tukey (1962), and Carver [(a) 1978, (b) 1978] have advocated

replication in research. Carver [(a) 1968] proposed that, in Educational research, a scientific method of examination of data and replication should be more employed, and suggested that replication be built into the design of Educational studies. Huck, Cormier and Bounds (1974) stated that replication is "one of the basic principles of competent research" and suggested that there is also a statistical rationale for either direct or systematic replication, since repetition of results contributes to the validity of a finding (p. 369-70).

While replication studies in Educational research are rare, there have been several major studies undertaken in the 1970's in response to public and professional concern about apparently declining academic achievements in school children since the mid-sixties (Harnischfeger and Wiley, 1976). Since concern was for performance in the 'basic' subjects, investigation of reading levels usually constituted at least part of these studies (Hedges, 1977; Clarke, Nyberg and Worth, 1977; Randhawa, 1979) and was the principal focus in at least one major study (Farr, Tuinman and Rowls, 1974).

Munday (1979) suggested that the major concerns of researchers in undertaking 'then and now' studies are the comparability of the samples from one time period to another, the suitability of tests for the curriculum from one time period to another, as well as other factors such as changes in grade-to-grade promotion practices, drop-out rates and such.

Most of these studies have involved examination and comparison of standardized test scores from one or several school districts. Concern about the suitability of tests from one time period for

nother has been addressed in several ways; Hedges (1977) used tests from 1933-8 and applied statistical weighting to compensate for changes in socio-economic levels, age-grade levels, vocabulary and school curricula in the later time periods, 1952-4 and 1975-7 subjects. In the Nova Scotia Standards Project (1977) three different editions of the same test were used during the twenty-three years spanned by the study.

Eligett and Tocco (1980) used a different approach to measure changes across time in Pinellas County, Florida. They tested their sixth-grade subjects with both the 1950 and the 1978-79 editions of three standardized tests then compared their results with the norms for each edition. The overall findings of the study supported those of many other large-scale studies which have shown declines in reading test scores since the mid-sixties although in their study the decline was only in the performance of the average and above average students.

In any study across time which involves reading achievement consideration must be given to these trends in changing test scores because of the confounding effects which may arise. Klein (1968) compared scores within groups of children in relation to specific reading material so that changes in overall reading achievement need not materially alter the internal effects looked for in this replication of his study.

In two 'then and now' studies (Farr, Tuinman and Rowls, 1974; Randhawa, 1979) the researchers drew attention to the difficulty of making comparisons when the earlier data had been collected in an unsystematic manner and had not been adequately stored. Since

Klein's 1967 procedures were fully described and the complete raw scores were available this difficulty was not encountered.

Klein's study had a balanced factorial design which was directly replicated in 1979. Data from both years were analyzed using parametric statics so that this study involved both a re-examination of the 1967 data, an analysis of the 1979 data, and a comparison between the two sets.

Hypotheses

Interest

1. There will be no difference between grade five boys' interests in sex-typed reading material in 1967 and in 1979.
2. There will be no difference between grade five girls' interests in sex-typed reading material in 1967 and in 1979.
3. The level of grade five children's reading interests will be determined more by the occupation of the main character than by the sex of the main character in 1967 and 1979.
4. Ratings of male and female characters by grade five boys will be more affected by sex-typing in the reading material than ratings by girls in 1967 and 1979.
5. Grade five girls will prefer female characters to male characters, regardless of the roles in which they are portrayed in 1967 and 1979.

Comprehension

1. There will be no difference between grade five boys' comprehension of sex-typed reading materials in 1967 and 1979.
2. There will be no difference between grade five girls' comprehension of sex-typed reading materials in 1967 and 1979.

3. When comprehension scores for all stories read are combined for each sex, there will be no difference in total comprehension for grade five boys and girls in 1967 and 1979.
4. Grade five girls' comprehension of their preferred stories will be higher than their comprehension of less preferred stories in 1967 and 1979.
5. Grade five boys' expressed interest in stories will not affect their comprehension of those stories in 1967 and 1979.

Assumptions

1. The sample of children, selected by randomization of classes, is representative of grade 5 children in Saskatoon Public Schools.
2. The holding constant of content and procedures from the 1967 study to the 1979 study allows comparisons to be made between the two sets of data.

CHAPTER II

REVIEW OF THE LITERATURE

A review of the literature related to this study concentrated on six categories of information: 1) sex differences in reading interests; 2) sex differences in reading comprehension; 3) the relationship of interest and comprehension; 4) the effect of sex-typed reading material on interest and comprehension: 5) the measurement of interest, and 6) the measurement of comprehension with cloze tests.

Sex differences in children's reading interests

Children's reading interests have been a focus of educational research for over 80 years. Bullock's study in 1897 of fifteen hundred pupils' reading interests was the first extensive study of student's expressed interests in reading content (Carter 1978).

Purves and Beach (1972), in their major review of responses to literature, reading interests and the teaching of literature, have contended that differences in methodology, subjects and measuring instruments make comparisons and generalizations from the findings of such studies very difficult. However, they suggested that, even with this difficulty, it was possible to ascertain that certain trends in interests were apparent. They concluded that:

> The interests of students is most closely associated with the content of a work rather than its form or styles, and the patterns of interest in content show differences between younger and older children and between boys and girls. (p. 108).

Investigations into children's reading interests have indicated that there are some common patterns in boys' and girls' reading interests. Norvell (1946, 1973) showed that boys and girls both reacted favourably

to books of adventure, mystery, humour and animals. Coleman and Jungeblunt (1961) found that the 750 subjects in their study rated action stories above all others. McKay (1971) found that, overall, the children in her study preferred books in the categories of adventure, animals, mystery and sports. Ashley (1972) found that adventure stories and mystery stories were ranked within the top six preferences from forty categories by both boys and girls in grades four to six.

However, a major finding of research into children's reading interests is that boys and girls have discrete interest patterns. Purves and Beach (1972) have pointed out that these sex differences persist even though boys and girls are usually required to read the same books in school (p. 94). These differences in the reading interests of boys and girls are most apparent at approximately a grade five level (Coleman and Jungeblut, 1961).

Sex differences in reading interests have been clearly demonstrated in several large-scale studies in which children's interests were categorized according to content type, on the basis of the subjects' expressed preference for certain stories, titles of stories, or books.

Thorndike (1941) assessed the reading preferences of 3000 boys and girls, in grades four to eight, by recording their choices of annotated titles in questionaires. He concluded that "Sex is conspicuously more important than age or intelligence as a determinant of reported interest patterns, at least, within the range of ability and age studies here" (p. 36).

Norvell (1946) studied the reading interests of 50,000 students in New York State over a twelve year period. On the basis of the

subjects' responses he devised interest-type categories then, using this classification, he analyzed the reading preferences of boys and girls for different grades, and for different ability groups. He found that sex was a highly significant factor. Norvell's study was extended to span interests over a forty-year period (1973). The findings led him to assert that "sex is so dominant and ever-present a force in determining young people's reading choices that it must be carefully considered in planning any reading program for the schools" (p. 47).

Dowan (1971) examined the personal reading interests of 1,100 children in grades three, four and five in selected Florida schools. Structured taped interviews were used with each child to identify interests in fourteen pre-determined interest categories. In eleven of the fourteen categories sex differences were statistically significant ($p < .01$). Boys were more interested than girls in adventure, tall tales, historical nonfiction, how-to-do-it, sports, and science. Girls were more interested than boys in animal stories, fairy tales, modern fantasy, children of the United States, and children of other lands.

Ashley (1972) investigated the reading preferences of 1,500 children in grades four to seven in parts of British Columbia. He found that in no grade did boys and girls select the same category for either their preferred kind of reading or their most disliked kind of reading.

Some researchers have attempted to identify significant factors which might influence or condition children's interests in reading. Their studies have usually involved such variables as age or grade,

intelligence, achievement levels, socioeconomic status, cultural and ethnic types and sex. Sex commonly emerged as a strong factor in determining children's reading interests.

Bouchard (1971) examined the content of books selected by 1,029 fourth, fifth and sixth graders in Milwaukee and administered a questionnaire on the reason for the book selection to one-fifth of these children. She found no significant differences among the reading interests of blacks, whites and Spanish speakers, nor between socio-economic groups or grade levels. Sex appeared to be the predominant factor in determining reading interests.

McKay (1971) analysed the expressed reading interests of 791 fourth, fifth and sixth grade children in Pittsburgh. Data was gathered to describe the subjects' ability levels, reading achivement, age, sex, socio-economic level, grade level, geographic location and race. McKay found that the factors or reading achivement, sex and intelligence exerted the greatest influence on reading interests of intermediate children.

Thorndike and Henry (1940) examined the reading interests of 207 rapid-learning and slow-learning children. They concluded that "in a determination of the pattern of reported reading interests, sex is a vastly more important factor than even the large difference in intelligence level characterizing these groups" (p. 762). Among the many details reported by Thorndike are several with particular relevancy for this study. There were reliable sex differences favouring boys for both ability groups in interest in boys' outdoor adventure stories into which category a pilot story could be placed.

Thorndike also found that biographical material had a high appeal and that sex differences were marked, with boys favouring reading material with a male protagonist and girls favouring material with a female protagonist. Ninety per cent of the boys in this study chose a pilot story as one they would like to read, compared with sixty one per cent of girls' choices for that content. The boys reactions to story titles showed the greatest range of interest with only six per cent electing to read about dolls, their least popular choice, compared with their most popular choice, that of the pilot (ninety percent). Girls' reactions were less extreme and ranged between twenty nine per cent electing to read a myth, and eighty six per cent choosing to read a realistic animal story.

Some details in Norvell's study (1973) echo some of Thorndike's findings. In Norvell's study boys and girls rated biographies almost equally, but closer examination showed that the difference between boys' rating of male biography and female biography was almost five times greater than the difference between girls' rating of male biography and female biography. While both sexes favoured biographies about their own sex, boys demonstrated more extremes of interest in respect of biographies than did girls.

Klein (1968) incorporated into his research design some of the common findings from research into reading interests both in his choice of the reading material and in the age group chosen for investigation. Reading material was designed with the expectation that reading materials with a pilot content and with a ballet dancer would result in dichotomous ratings by boys and girls. These expectations

were realized in his study for boys preferred the pilot stories to the ballet dancer stories while girls preferred the ballet dancer stories to the pilot stories. Grade five children were chosen for the study in the expectation that this dichotomous pattern of interests would be sufficiently evident and extreme in this age group to allow comparisons to be made within the subjects.

Sex differences in reading comprehension

A widespread impression exists among teachers that girls are superior to boys in readiness for reading and reading achievement (Spache and Spache, 1973, p. 55, Dechant, 1970, p. 98). Testimony to teachers' protracted concern about this widespread belief is evident in such papers as 'Let's give boys a break!', (Phi Delta Kappan, 1959) and books such as Reading Rights for Boys (Austin, Clark and Fitchett, 1971).

Boys typically constitute the larger proportion of remedial reading classes (Zintz 1977; Gilliland, 1974). Blom (1971) found that between 60% and 90% of elementary school children referred for remedial reading instruction are boys. A survey of children reading one or more years below grade level in the Saskatoon Separate School System showed that the numbers of boys and girls described in this way were almost equal (Klein, 1977). However, in remedial reading clinics conducted at the University of Saskatchewan, between 1970 and 1980, 80% of the pupils were male.

Differences in boys' and girls' reading performances have been attributed to several factors. The prevailing theories from the last twenty years include societal and cultural causes (Preston, 1962;

Johnson, 1973); feminization of the school (Kagan, 1964, Sexton, 1969, Austin, Clark and Fitchett, 1971) reading viewed as 'feminine' pursuit (Stein and Smithells, 1969); inattentive behaviour (Asher, 1977).

Massive surveys of reading achievement have contributed to the evidence of girls' superiority in reading skills. Results of the National Assessment of Education Progress, in both 1972 and 1976, in the United States showed that, in the age groups examined (9, 12, and 17), girls outperformed boys on reading comprehension tasks. Gates (1961) compared the results of children, aged 7 to 13, tested with the Gates Reading Survey Test. Girl's performance exceeded that of boys particularly in speed of reading, level of comprehension, and reading vocabulary.

Parsley, Powell, O'Connor and Deutsch (1963) investigated the academic performance of 5,020 boys and girls aged 7 to 13 years. The California Reading Achievement Test was one of several given. The results showed no significant differences in performance between boys and girls for reading vocabulary and reading comprehension. In a second study Parsley, Powell and O'Connor (1964) investigated the academic performances of 3,551 children in grades four to eight, in five I.Q. groupings and at three achievement levels within these groupings. The reading vocabulary and the reading comprehension results of the California Achievement Test Battery were compared between sexes and grouping using t-tests. In most sub-groups girls' performances exceeded that of boys in both aspects of reading achivement, the differences being statistically significant.

Thorndike (1973) examined reading comprehension of approximately 100,000 children in fifteen countries in three age groups. He found

that in the ten year old children, girls' performance was superior to that of boys in 11 of the 15 countries; for the fourteen-year old group this was true in 9 countries; for the group of students in their final year of secondary education this was so in 10 countries. The median correlation between sex and reading comprehension was very low (.05) across all samples.

Johnson (1973) used American reading tests to examine sex differences in reading of 1081 children in Canada, England, Nigeria and the United States in grades two, four and six. Johnson's finding led him to generalize that boys generally scored higher than girls in England and Nigeria while girls generally scored higher than boys in the United States and Canada. Closer examination of Johnson's findings show that in the Canadian sample there were only six comparisons, of a total of eighteen, in which differences were statistically significant ($p < .05$). These favoured girls in grade 2 - comprehension, variant consonants, and vowel sounds, and in grade 4 - variant consonants and structural analysis. In the grade 6 sample there was only one statistically significant difference. This was in vocabulary and it favoured boys.

Cardon (1968) reviewed the literature describing sex differences in school achievement. He pointed out that in the studies he reviewed few had produced results in which boys' and girls' achievement levels were statistically significantly different. However, there was a consistent tendency for the girls' scores to be higher than the boys' scores.

McCaulay (1978) reviewed research in sex differences in language and

concluded that "the evidence of consistent sex differences in language development is too tenuous and self-contradictory to justify any claims that one sex is superior to the other." (p. 361).

Several studies of reading achievement in and around Saskatoon, Canada, have indicated that differences in boys' and girls' reading achievement are seldom significant but generally favour girls. Konschuh (1971) found that boys scores were slightly higher than girls on multiple choice tests, but girls' scores were higher than boys when cloze tests were used for the same material. Welliver (1973) found that there were no statistically significant differences in several aspects of reading achievement tested in a sixth-grade sample.

Tremans-Ziremba and Michayluk (1980) examined reading achievement in 143 grade four students in ten randomly selected Saskatoon schools. They examined the relationship between reading achievement (as measured by the Canadian Test of Basic Skills) and several selected variables: self-concept, birth order, intelligence, sex, position in family, family size, age and socioeconomic status. The correlation coefficients between sex and vocabulary scores was 0.16 and between sex and comprehension scores was 0.14, neither of which was statistically significant. These findings lend support to Klein's (1968) finding that in Saskatoon there were no statistically significant differences between the reading comprehenshion scores of boys and girls at the grade five level.

The relationship of reading interest and comprehension

An assumption commonly held is that interest in reading enhances reading performance. Purves and Beach (1972) wrote, in their review of research into reading interests, that:

> The research has not carefully examined the different specific factors of comprehension as related to specific interests. Usually reading tests do not consider the reader's interest in the content of items, which could influence the student's score and result in an underestimate of comprehension. (p. 97)

Estes and Vaughan (1973) claimed that "The effect of interest on reading is obvious to anyone who has tested or taught reading comprehension". They argued that in spite of this there had been little impact of "something so apparent" on strategies of testing and teaching reading comprehension (p. 149).

However, demonstration of this apparent link between comprehension and reading interests has proved elusive. The research findings suggest that this relationship is demonstratable only in some types of reading content and in some difficulty levels of reading material.

Some researchers have attempted to demonstrate the effect of interest on comprehension by using reading materials which are rated at a difficulty level higher than the performance level of the subjects. Other attempts to demonstrate the relationship between interest and comprehension have focused on extremes of 'likeable' and 'unlikeable' reading material or have allowed the subjects to make choices from a range of materials or topics.

Several studies have established that where reading difficulty is a factor it is possible to demonstrate that there is an effect of interest on comprehension levels.

Shnayer (1967) used 578 subjects from 17 sixth-grade classes in California. The subjects were divided into seven reading achievement level groupings on the basis of results of the Gates Reading Survey Test. Each group read fifteen stories from selected SRA Reading Laboratory

material which was chosen so that the readability levels of the selections were two years above the reading performance level of the group required to read them. Subjects responded to the stories with a four-point scale to determine interest and completed a comprehension test of open-ended questions. Shnayer found that the difference between the comprehension of the high interest stories and the comprehension of the low interest stories across the total sample was statistically significant ($p < .001$). Shnayer also found that the effect of interest on comprehension was significantly greater for the lower ability groups than the higher ability groups.

Estes and Vaughan (1973) investigated the responses of forty-six grade four children to material rated approximately one and a half years above their performance levels. Informal reading inventories were prepared, one for each of six story types (folk tales, animals, sports, space, mystery and foreign lands) then using only the titles the subjects each selected which story they would most like to read and which they would least like to read. Students were tested individually with ten open ended questions designed to measure comprehension. The difference between the mean comprehension scores of the selected high and low interest materials was statistically significant ($p < .001$).

These findings have been confirmed in studies where ability or achievement levels have consituted a design factor. Where reading difficulty is encountered, as it is in the low ability or low achieving subjects, reading at their grade placement level, it is possible to demonstrate the effect of interest.

Vaughan (1975) examined the responses of 288 randomly selected

students from three ability grouping in each of grades four, six, eight and eleven. At each grade level students were given seven annotated titles which they ranked in the order they would like to read the stories. Several weeks later the subjects each read the passages for their first and last title selections then were tested with fifty deletion cloze tests. Vaughan found that at all grade levels the effect of interest on comprehension was significantly greater in the less able readers than the better readers ($p < .001$) although the differences did tend to dissipate towards the higher grades.

Other researchers have attempted to tease out the relationship between interest and comprehension by obtaining extreme measures of 'like' and 'dislike' and comparing the comprehension for each set. Some studies have attempted to measure the individual interests of students from a wide range of topics or reading material. In others, reading material thought to be 'liked' or 'disliked' has been provided so that relative comprehension for each may be examined. Yet a third group, which will be described in a separate section in this review, has provided dichotomized reading material for the subjects and, because of the wide variations in interest patterns by sex factor, has provided reading material of interest to boys and reading material of interest to girls i.e. sex-typed reading material.

Steven Asher spearheaded a group of studies at the University of Illinois, Urbana-Champaign, in which an attempt was made to isolate invidual 'likes' and 'dislikes' and then to measure related comprehension. Asher was concerned that post-reading interest measures or choices based on titles or annotated titles, could be contaminated by the difficulty

level of the reading matter or titles themselves.

Asher and Markell tried to incorporate into their design a measuring approach whereby individual children's interests could be utilized without the influence of the reading material itself. To attain this goal they measured children's interest with a set of twenty-five pictures in which the topic for each was identified by the children. The children were given twenty-five 1-7 rating scales ranging from 'very interesting' to 'not at all interesting' on which to record their opinions. The slides were shown to the children at the rate of one every ten seconds and at that time they recorded their interest rating. For each of the twenty-five topics a ten item deletion cloze test was made over twenty-five passages from the Britannica Junior Encyclopaedia. The average readability for these passages was 6.53 when readability was assessed with the Dale-Chall formula. One week after the interest assessment the children were each given cloze tests, which corresponded to their high and low interest choices. The children then completed questionnaires about how much they would like to read more about the topics of the passages they had just read.

These materials and this sequence of testing was followed in two studies. In 1974 Asher and Markell assessed the interests and comprehension levels of eighty-seven fifth grade boys and girls who each completed the tests for their three 'most interesting' and their three 'not at all interesting' topics. Analyses of the data led Asher and Markell to conclude that boys' comprehension scores were more affected by interest than were girls' scores; boys and girls comprehension scores were not significantly different on high interest material but they were

significantly different on low interest material, with boys scores being lower. These results were common to both high and low-achieveing students.

In a later study by Asher, Hymel and Wigfield (1978) seventy-five fifth grade children participated in a similar study. In this study each child was randomly assigned either to group in which each person completed cloze tests for their five high interest topics, or to a group in which they were given cloze passages corresponding to their five low interest topics. Results of this investigation showed that both boys' and girls' comprehension scores were significantly higher for the high interest material. Unlike Asher and Markell's findings, this study showed that girls also performed significantly better on high interest material than they did on low interest material.

Bowermaster (1976) used Asher and Markell's reading material from their 1974 study to investigate the effect of choice on reading and attitude of fifth and sixth grade students. Subjects were randomly assigned to three groups; in one of these they could make a cued choice of reading material, in another they could make a blind choice and in the chird group they could not choose their reading material. Each student completed five cloze passages then completed an interest questionnaire about the passages. The boys in the cued choice performed substantially better than the boys in the other two groups but there were no significant differences between the girls' groups. Bowermaster concluded that boys were affected by being able to choose their reading material more than girls were.

Another study from Urbana-Champaign suggests that differences between interest ratings before reading may not differ very much from

post-reading interest ratings. Koch (1974) investigated reading interests and reading comprehension in sixty-two fourth grade goys and girls and ninety sixth grade boys and girls. Each subject was given a list of ten story topics to be rated for interest on a nine point scale. A week later the subject read ten short passages, chosen to correspond with the topics. They then rated them individually on the nine-point interest scale, before completing a multiple-choice comprehension test. An attitude survey was also utilized in this study. Analysis of the data showed a statistically significant relationship between the two sets of interest ratings. There were no statistically significant relationships between reading interests and reading comprehension for any grade, sex, reading ability or reading attitude group.

In all the studies cited so far, both in those studies attempting to show the relationship of interest to comprehension by using more difficult reading material and in those attempting to measure interest without contamination of reading difficulty levels, there has been measurement of individual interests from groups of material. Comparisons have then been made between sets of materials equated and grouped by two measures -- a readability index rating and the expressed interest of the subjects. For example, in Shnayer's (1967) study, reading material was all rated at a grade two years above individual reading performance levels, then all the high interest stories were grouped for comparison with the low interest group. In all, data in response to 105 pieces of reading matter were grouped into 14 sections for comparisons to be made between groups. The control of extraneous variables for this amount of

reading material is a difficulty which may reduce the value of inferences made about comprehension, particulary when group comparisons are involved.

A small number of studies have forced subjects to make a choice of most preferred and least preferred reading material where all subjects would read all the reading material used in the study or where sets of subjects would read the same material. In this way factors used in the reading material which may enhance or limit comprehension but were not measured by reading formulae are encountered by all subjects or groups of subjects so that within group comparisons were not confounded.

Bernstein (1955) administered a five-point interest scale and a comprehension test (objective and free-response questions) to one hundred ninth-grade children in New York City. Each student was required to read two passages, written at comparable readability levels, one of which was designed to be interesting to the subjects, and one of which was not expected to appeal to them, on the basis of Norvell's 1950 research findings in adolescent reading interests. The results showed that comprehension was significantly higher in the story which was rated as most interesting by three-quarters of the subjects. Bernstein reported a statistically significant correlation of .23 between interest and comprehension.

Saoi (1976) randomly assigned subjects to high or low interest reading groups but nevertheless controlled the reading material by providing only one set of reading materials for each of the two groups. She assessed the effect on reading comprehension of levels of interest, sex, achievement and self-concept. Two hundred and twenty children in

South Dakota took part in the study. Each selected the most and the least interesting reading material from titles and the first thirty words or so of stories from eleven categories with three stories in each category. Interest was rated on a five-point scale. Students were randomly assigned to high or low interest groups. Comprehension was tested with fifty-deletion cloze tests. A four-way factor analysis showed that the effect of achievement was significant ($p < .05$) but that interest, self-concept and sex were non-significant.

The effect of sex-typed reading material on interest and comprehension

A number of studies have incorporated into their design the knowledge that boys and girls have different reading interests. In these studies reading materials are chosen to appeal to boys or chosen to appeal to girls. The expectation is that the dichotomous interests of boys and girls may be accompanied by detectable differences in variables thought to be associated with interest.

Groff (1955) was one of the first researchers to use sex-typed material. He created a mild adventure story to appeal to the reading preferences of girls, a sports story to appeal to boys, and two neutral stories, one about an airplane and the other about manners, which were expected to appeal equally to boys and girls. Three hundred and five fifth and sixth graders in California read the stories. For each story they answered a thirty-two item multiple choice test in which eight questions tested recall and twenty-four tested critical thinking. The subjects then rated each story for interest on a one to five point scale and also indicated interest in reading topics by responding to an annotated bibliography with the five point rating scale. Boys favoured

the airplace and sports stories while the girls preferred the adventure and manners stories. For both boys and girls comprehension was better in the more preferred content. Groff reported correlation coefficients of .23 to .50 for interest and critical reading but only a negligible relationship (135 to .35) for interest and recall.

Henry (1969) used selected reading material thought to be interesting to boys and selected reading material thought to be interesting to girls. Her study involved eighty matched pairs of boys and eighty-two matched pairs of girls from grade five. One half of each pair read material on a topic selected to appeal to boys while the other children read material on a topic chosen to appeal to girls. The subjects completed multiple-choice tests and cloze tests to measure their levels of comprehension. Henry found that boys comprehension was significantly higher on reading material interesting to boys, while girls comprehension was significantly higher on the selection of reading interesting for girls. The girls seemed to be more affected by the content than the boys; the comprehension scores of the girls reading girls' interest material was significantly higher than the scores of girls readings boys' interest material whereas the difference for the boys' scores between both kinds of material was much smaller. These differences were apparent on the multiple choice scores but not on the cloze scores.

Belloni and Jongsma (1978) investigated the effects of interest on reading comprehension in fifty low-achieving grade seven students in the south-eastern United States. Sex-typed reading material was used. Three stories were selected for each of these four categories -- interesting to boys, interesting to girls, interesting to both boys

and girls, and interesting to neither boys nor girls. Difficulty level was some two to four grade levels above the students' mean reading level. Each student met individually with one of the researchers to look at the stories, in booklet form, and to select which one of the twelve stories he would most like to read, and which story he would least like to read. A week later students read the stories they chose and their comprehension was tested with a fifty deletion cloze test for each story read. Cloze performance score was about 30 per cent on low interest passages and nearly 40 per cent on high interest passages which was a significant difference ($p < .001$). There were no significant differences between the performances of boys and girls.

The differences in boys and girls reading interests have led some researchers to investigate the characteristics of reading material which appeals to the different sexes. Investigations have focussed on content, sex of the main character, and occupational role of the main character.

Bleakley (1977) attempted to find whether the sex of the main character had an effect on the interest and comprehension of the subjects when they read adventure, humour and mystery stories. She selected five hundred and forty fifth-grade children from two school districts in Colorado. Achievement levels and sex were considered in randomly assigning the subjects to materials. For each story type, three stories were selected from children's periodicals between 1969 and 1973. All stories had originally been written with a male main character. Bleakley adapted these to have a female main character so that there were two versions of all nine stories. After reading, the subjects

completed an interest measure consisting of eight multiple choice questions and two sentence completion items. Comprehension was measured by fifty deletion cloze tests made over randomly selected passages from the stories. A second comprehension measure consisted of eight multiple choice tests for each story. Bleakley found that girls expressed significantly more interest than boys ($p < .05$). There was a significant sex of the main character or characters by sex of the reader interaction ($p < .01$); boys preferred male main characters and this preference was more intense than the girls' preference for female characters. Mystery stories were the most popular for both sexes, followed by adventure stories, then humorous stories. Bleakley found that when comprehension was measured by multiple choice tests the characteristics of individual stories had less effect on the scores of boys than on the scores of girls. These different effects were not apparent when comprehension was measured by cloze tests.

Frasher (1977) wished to find out whether boys rejected the female characters because of their sex or because of the role they usually occupy. She chose to examine the reactions of thirty-one boys and girls in grade three to the characters in Pippi Longstocking by Astrid Lingren. The children were asked which of the three characters, Pipp, Annika and Tommy, they liked best, which they most resembled and whom they would prefer as a friend or neighbour. The results of this small study in which the boys selected Pippi, a girl, as their most liked character suggests that sex alone in the character does not lead to acceptance or rejection by a male reader. Frasher suggested that it may be that the excitement, adventure and humour generated by Pippi was more important to the boys than was her sex.

In a more extensive study, Frasher and Frasher (1979) examined the effect of sex of the main character in children's stories on the preferences and comprehension of 387 grades five and six children. Four stories were selected so that one contained a male character in a traditional role, one a male in a non-traditional role, one a female in a traditional role, and one a female in a non-traditional role. All stories were equated for readability. Some children read all four stories, some read the two male stories and some read the two female stories. Comprehension was measured by multiple-choice tests and preferences were ascertained by questions.

For subjects who read two stories, either with male or female characters there was no effect of sex or role of the main character on comprehension. Boys who read only stories with female main characters almost all indicated preference for the female in the non-traditional role and rejected the traditional female. The boys who only read stories with male main characters liked both stories equally. Frasher and Frasher suggested that the boys did not perceive that one of the protagonists was largely "feminine" and considered the protagonists behavior to be appropriate. Girls who only read 'male' stories or only 'female' stories showed no preferences for either of the stories of the two they read.

Where subjects read all four stories, more differences between boys' and girls' patterns of preference and comprehension emerged. Girls preferred stories with female main characters ($p < .01$) and preferred the nontraditional 'male'story over the traditional 'male' story ($p < .01$). Boys preferred stories with male main characters

($p = < .01$) and preferred the traditional 'male' story over the non-traditional male story ($p < .05$). Comparision of comprehension scores showed that boys' scores were significantly higher for stories with male main characters than with female characters. There were no other statistically significant differences between comprehension scores.

Metz (1978) used reading materials from Klein's dissertation to examine the effect of sex-roles on children's interest and comprehension. She found, as did Klein, that children's interests were more determined by occupation type than by sex of the main character. However, unlike Klein, she also found that neither boys nor girls had preferences for males or females within the preferred occupation type. Metz' boys and girls produced approximately equal mean comprehension scores. However, boys showed a greater spread of comprehension scores on the masculine role than on the feminine role. The sex of the main character did not have any significant effect on the comprehension of boys and girls.

Table 1 includes a summary of the findings of research studies into reading interests and comprehension. The findings indicate that there is no clearly established relationship between interest and comprehension; in 35 per cent there was no significant relationship and in 52 per cent there were mixed findings. In all but one of the studies in which sex-typed reading materials were used, the findings were mixed and in general indicated that the patterns of the relationship of interest and comprehension were different for each sex. The one 'sex-typed' study in which a significant relationship was reported was that of Belloni and Iongsma (1978) in which the subjects were all characterized by a low reading achievement level so that reading difficulty level of the material

	SUBJECTS				INTERESTS			COMPREHENSION			RELATIONSHIPS		
	N	GRADE	Achievement level	Sex-typed material	Inventories	4-9 point scale	Other	Cloze	Multiple-choice	Open-ended questions	Significant (positive)	Not significant	Mixed
Asher & Markell (1974)	87	5	*		*	*		*					*
Asher (1975)	70	5	*		*	*		*					*
Asher, Hymel & Wigfield (1978)	75	5	*	*	*	*		*			*		
Belloni & Jongsma (1978)	50	7	*		*			*			*		
Bernstein (1955)	100	9				*			*	*	*		
Bleakley (1977)	540	5	*	*	*	*		*	*				*
Bowermaster (1976)	92	5,6			*	*		*					*
Estes & Vaughan (1973)	46	4			*		*			*	*		
Frasher & Frasher (1979)	387	5,6		*					*				*
Groff (1962)	305	5,6		*		*			*				*
Henry (1969)	322	4,6		*			*	*	*				*
Klein (1968)	312	5	*	*		*	*	*					*
Koch (1974)	152	4,6			*	*			*			*	
Metz (1978)	91	5		*		*		*					*
Saoi (1976)	220	4	*	*	*	*		*				*	
Shnayer (1968)	578	6	*		*	*				*	*		
Vaughan (1975)	524	4,6,8 11	*					*			*		

increased the possibility of demonstrating a significant relationship between interest and comprehension.

The measurement of interest

Table 1 demonstrates the two principal methods of describing interest in interest comprehension studies: firstly, by the subjects' selection from an inventory (topics, titles, annotated titles, or stories) and secondly by the subjects' completion of a traditional 'like-dislike' scale. In some studies both methods have been used and in yet others an additional measure has been involved.

Coleman and Jungeblut (1961) investigated the reading likes and dislikes of 750 children in grades four through six. Part of their study was to ascertain the suitability of a six point continium scale for recording the preferences of this age group. They concluded that this kind of scale was appropriate for this age group, for this purpose. Klein used a six-point scale. Scales used in other studies range in length from four to nine points.

The measurement of comprehension with cloze tests

More than half the studies cited in Table 1 employed cloze tests to measure comprehension. Other studies have used multiple-choice tests, as well as other tests, most of which have involved some kind of open-ended question. Simons (1971) reviewed different approaches towards measurement and definition of comprehension and suggested that in cloze tests fewer extraneous aspects of students' functioning appear to be involved and also that the mechanical procedure make it a more objective measure than some other methods of comprehension measurement.

Cloze tests as a measure of comprehension were introduced by

Taylor (1953) and were extensively investigated and researched by Bormuth from 1962 onwards. Studies on the validity of cloze tests have often measured concurrent validity. Those studies typically produce high correlation coefficients e.g. with Gray Oral Reading Test - .90 to .96 (Bormuth, 1965), with an informal reading inventory -.78 (Walter, 1973) with the Stanford Achievement Test, word and paragraph meaning -.68 and .60 (O'Brian, 1973).

Bormuth (1965) calculated the confidence levels for testing with certain sample sizes and certain cloze tests lengths e.g. a sample size of 150 subjects and a 40 deletion cloze test would be about 95 per cent reliable. Culhane (1970) recommended that a fifty-item deletion cloze test facilitates scoring and effectively samples comprehension.

Most of the studies cited in Table 1 employed a fifty item cloze test. The exceptions were Asher's studies (1974, 1975, 1978), Bowermaster's study and Koch's in which ten-item cloze tests were used.

The research into cloze tests has almost exclusively dealt with tests in which every fifth word was deleted. Klein used tests with every seventh word deleted which may be seen as reducing the reliability of the test. However, the length of the tests and the size of the sample ensured the maintainance of reliable scores, while the repeated measures reduced the subject variability. Empirical evidence from Klein's study and from Metz's study in which mean scores for all stories and all groups fell between 43 per cent and 54 per cent suggested that the material was appropriate for the grade five subjects (Zintz, 1977).

CHAPTER III

SUBJECTS, MATERIALS AND PROCEDURES

The method of subject selection, materials, and procedures for data collection were exactly similar to those employed in Klein's study.

Selection of subjects 1979

The subjects were fifth-grade children from the Saskatoon Public School System. The total enrollment of grade five students in April, 1979, was 1463, grouped in 63 classrooms. Of the 63 classrooms, 25 were combined grades, 2 were special classes for academically talented children, and 3 classes included learning disabled children. Using procedures of 1967, the preceding types of classrooms were eliminated. Thus the random sample of classes was taken from the remaining 33 classes which contained only fifth grade children. Each class was designated one of a series of consecutive numbers, then a table of random numbers was used to select the 18 classes for the study.

The total number of students tested in the 18 classrooms was 453. Students whose work was incomplete and therefore excluded from the final analysis numbered 76, an attrition rate of 17%, leaving a sample of 377 grade five children in the study.

A comparison of 1967 and 1979 samples

The 1979 sample of 377 children compared with Klein's total sample of 312 grade five children from 13 classrooms drawn from the 46 straight grade five classes in Saskatoon Public School System in 1967.

In April, 1967, the total number of grade five children in the Saskatoon Public School System was 1750 children which constituted 11.7% of the total Kindergarten to Grade 8 population of 14,978 children. In April, 1979, the total number of grade five children in the Saskatoon

Public School System was 1463, which constituted 10.4% of the total K-8 population of 14,126 children.

Both samples were drawn from these populations by similar randomization procedures and could therefore be regarded as comparable in this respect.

Data for census tracts in Saskatoon (1971) were used to compare the socio economic status of the two samples. Family income levels and family cycle index ratings were found to be approximately the same for both samples. Demographic data from the census (1961, 1966, 1971, 1976) indicated that both studies were undertaken when the community was expanding. Details of the comparison of samples on the basis of census information are outlined in the appendix to this study (appendix A)

Materials

The materials used in this study were developed by Klein for his 1967 study. The 1979 study was limited to an analysis of data related to the 8 stories which elicited different responses by boys and by girls. For each story, Klein devised a 50 item cloze test to measure comprehension of that story and an interest scale to measure expressed interest in that story.

Stories

The stories were constructed to allow for control of the occupation of the main character, the sex of the main character, the readability level, and length, (appendix B)

Occupation: Two occupation types were chosen to represent a typical female role, a ballet dancer, and a typical male role, a pilot

on the basis of census information for Canada and the United States (Klein p. 58-60). Two short stories of approximately 450 words in length, were used for each occupational type.

Main Character Sex: Each of the four stories was originally written with a male main character. Corresponding female versions of the stories were written by substituting a female name and all gender-related words for that character.

e.g.

Arnold had no other plans	Ann had no other plans
for his life than to act	for her life than to
in his father's plays.	act in her father's plays.

Readability: The Dale-Chall formula was used by Klein to equate readability levels of the stories. Metz (1978) evaluated the stories with the Fry formula. Both evaluations supported the equivalency of all stories since the Dale-Chall formula showed the range was from Grade 5.2 to grade 5.6 and the Fry formula yield a range of grade 6 to grade 6/7. Identification of unfamiliar words which occurred in the stories was made using the Dale-Chall 3000 word list: the number of unfamiliar words ranged from 18 in the Sheldon Story to 30 in the Banks story. All readability assessments were made with three approximately one hundred word length samples. (Table XII-appendix C)

Organization of Stories:

Each of the eight stories was identified by the title, which contained both the name and occupation of the character, and by a 3-digit number, e.g. 122-Ann Banks, Ballet Dancer.

The eight stories were organized into two sets, Form A and Form B, each containing four stories, such that each subject, given a set of stories, would read one about a male pilot, a female pilot, a male dancer and a female dancer, and moreover would not encounter two versions of the same story.

Form A	Form B
122 Ann Banks, Ballet Dancer	121 Arnold Banks, Ballet Dancer
123 Lawrence Petit, Ballet Dancer	124 Linda Petit, Ballet Dancer
131 Don Sheldon, Pilot	132 Debbie Sheldon, Pilot
134 Rita Travers, Pilot	133 Roy Travers, Pilot

Within each set of stories the order of the stories was randomized then the pages were assembled into two booklets.

Comprehension Tests

Cloze tests were used to measure comprehension of the experimental stories. Each cloze test was an every seventh-word deletion, 50-item test. The first deletion point was the second word of the first sentence to follow a forty word introduction (Klein p. 67-68). Each deletion was numbered so that the child could enter his response in a numbered answer sheet.

The length and format of the tests conform to Bormuth's specifications for a sample of this size (1965). His tables yield a reliability of 95% for a forty-item cloze test and a sample of 150 subjects.

Order effect was reduced by randomization of the tests corresponding to the stories in booklet A, and by randomization of the tests corresponding

to the stories in booklet B. Answers to the cloze tests were written into answer booklets separate from those cloze text booklets so that the text booklets could be recycled.

Interest Measure

A six point like-dislike scale was used to measure expressed interest in a story.

Answer Booklets (appendix D)

Two five-page answer booklets were made for each subject. The cover page for each included space for pupil number, name, school, age and form (A or B) as well as instructions for completion of the pages inside the booklet.

(i) Interest Booklets: The answer pages in this booklet each had a space for the number and title of the story to which the child was reacting and a six-point like-dislike scale in which the child indicated his response by putting a cross in the box he chose.

(ii) Cloze test booklets: The answer pages in this booklet each had a space for the number and title of the story for which the child was completing the comprehension test, and then fifty numbered line blanks in which the child recorded his answer corresponding to the numbered deletions for that test.

Coding

To facilitate organization, distribution and sorting of materials, colour-coding and number-coding was used. All story booklets and cloze text booklets for Form A were assembled with a yellow cover, while Form B story booklets and cloze test booklets were assembled with a green cover. Answer booklets were colour-coded with blue covers for boys' booklets and pink covers for girls' booklets.

Number-coding was used both for story and subject identification. Each story was given a three digit number corresponding with Klein's numbering system (Klein p. 163. 165). Each subject was identified by a five-digit number: the first two digits indicated the subject's school, the third digit represented the child's sex, and the fourth and fifth digits were for identification of the individual. All answer booklets were stamped with these identification numbers before the subjects received them.

Procedures

A pilot study was undertaken at St. Charles' School with a grade 5-6 class in early April 1979 in order to check the sequencing and timing of procedures.

Testing for this study was completed by the researcher and Dr. Klein between April 23 and May 4, 1979. Both researchers were guided by a set of written procedures and instructions to classes so that data collection was systematic (appendix E)

Each researcher stayed with a class until all children had read all their stories, completed their interest scales and completed at least one cloze test. The classroom teachers all had agreed to schedule time for completion of the cloze tests and were provided with written instructions, (appendix E), so that they too could facilitate a systematic data collection. Once the tests were completed they were collected by the researcher.

Distribution of Materials

All materials for each student were distributed at the beginning of the testing session. Each student was given two answer booklets (pink or blue), a purple ditto sheet with a practice cloze exercise,

DISTRIBUTION OF MATERIALS

'X' Children		'Y' Children	
'X' boys	'X' girls	'Y' boys	'Y' girls
FORM A Interest and Comprehension		FORM B Interest and Comprehension	
Male Pilot Story 131		Male Pilot Story 133	
Female Pilot Story 134		Female Pilot Story 132	
Male Dancer Story 123		Male Dancer Story 121	
Female Dancer Story 122		Female Dancer Story 124	

Figure 1: Distribution of reading materials by form.

Figure 2: Distribution of reading materials by sex of reader

Total Sample - 'Y' Children

'Y' Boys				'Y' Girls			
Main Male Character		Main Female Character		Main Male Character		Main Female Character	
Story 121		Story 122		Story 121		Story 122	
Story 123		Story 124		Story 123		Story 124	
Story 131		Story 132		Story 131		Story 132	
Story 133		Story 134		Story 133		Story 134	
Male Character Non-Traditional Content	Male Character Traditional Content	Female Character Non-Traditional Content	Female Character Traditional Content	Male Character Non-Traditional Content	Male Character Traditional Content	Female Character Non-Traditional Content	Female Character Traditional Content
Yx Story 123	Yx Story 131	Yx Story 134	Yx Story 122	Yx Story 123	Yx Story 131	Yx Story 134	Yx Story 132
Yx Story 121	Yx Story 133	Yx Story 132	Yx Story 124	Yx Story 121	Yx Story 133	Yx Story 132	Yx Story 124

and a purple ditto sheet with a practice interest inventory exercise. These were distributed by students since they always wanted to help and this time allowed for informal exchanges between the researcher and the students so that some rapport was established early in the testing session.

The story booklets and cloze test booklets were always distributed by the researchers since the design of this study demanded a random distribution of Forms A and B among the two sexes. Distribution of these booklets always began with the child sitting in the first seat of the first row to the right of the researcher and all forms were handed out alternately: A,B,A,B, etc. to all the children in that class of the same sex as the first child. Then the opposite sex children received their booklets, again A,B,A,B, etc. In the next class encountered, the forms were distributed in the same way but alternating B,A,B,A, etc.

After the materials were distributed the students completed their personal information for which spaces were provided on the front of their answer booklets. Particular attention was given to matching their five-digit identification numbers on their booklets and to ensuring that they indicated whether they had been given Form A or Form B stories.

Administration of tests

Interest Inventory

Part of a story from a fourth grade basal reader (Russell, 1962, p. 364) a like-dislike scale, was used to demonstrate to the students the way in which they were to complete their interest inventories.

The class was asked to listen while the researcher read the beginning of a story retitled "Roger Bannister, Track Star." After listening to

the story, the children were shown the story project on a screen in the classroom, so that they could see the title of the story and its code number. The students entered this information into their practice interest exercise.

An overhead transparency of this exercise was projected onto the screen and the children were shown how to complete the like-dislike part of the exercise. The children were encouraged to express their responses orally so that the researcher could ensure that they understood how to complete the like-dislike scale.

After it was felt that the class understood the procedures for responding to the interest scale the children were asked to turn to the first story in their booklets. They were allowed three minutes to read this story. Klein had found this to be an appropriate length of time (p. 73). At the end of three minutes the children completed an interest scale in response to the story they had read.

For stories two, three and four, the children were also given three minutes reading time followed by time to complete an interest scale.

Cloze Tests

A short cloze text exercise based on an excerpt from a third-grade reader (Sheldon, 1963, p. 158) was given to the children on separate ditto sheets, and was projected on a screen. The test was completed and discussed with the class. Once the technique was understood the children began the cloze tests for this study. The children all worked at their own rate and the researcher stayed until all children had completed at least one test. The class teachers supervised completion of the cloze tests.

Processing the Data

The scoring of the test materials followed the guidelines established by Klein in his study and the raw data was recorded on IBM cards as it was in the 1967 study (Klein p. 74-75).

Scoring of Test Materials

The interest inventories and the cloze tests were scored by hand by the researcher and an undergraduate student in Education.

Interest Inventory: The like-dislike scale has six statements. They were all given numbers from 1 to 6, where 6 was given to the most positive response.

Cloze Test: The score for each test was the number of words replaced which matched the original word in every way, except in spelling and in capitalization or internal punctuation. Both numerals and their spelled-out form were acceptable. Occasionally a student wrote two words on an answer line. If the extra word was an adjacent one and appeared to have been written inadvertently the answer was regarded as correct. Otherwise, when two words were used as answers, even though one was the deleted word, no credit was given.

Tabulation of Raw Data

All information was compiled on worksheets by the researcher and two colleagues. For each child there were four lines of worksheet space, each of which contained personal information, a record of his interest inventory response for one story and his cloze test score for that story. Key punch operators punched the information onto IBM cards so that there were four cards for each child, and each containing the child's interest and comprehension response for each story read by him.

Chapter IV

RESULTS AND ANALYSIS

This study involved a direct replication of an earlier study which sought to examine the effects of sex-typed reading material on the interests and comprehension of grade five boys and girls. Data from the two studies were combined for analysis by four-way analysis of variance (ANOVA). The independent variables were time (two levels -- 1967, 1979), sex of the reader (two levels — boys, girls), occupation of the story main character (two levels — pilot, dancer), and sex of the story main character (two levels — male, female). Both the occupation and the sex of the main character were repeated measures. The dependent variables were interest in the reading material and comprehension of that reading material.

Data from 689 grade five children were analyzed. Of these, 312 comprised the 1967 sample and 377 the 1979 sample. In 1967, a total of 382 children were tested of whom 70 failed to complete all the tests and were dropped from the study. In 1979 a total of 453 children were tested, of whom 76 were discarded because of failure to complete all tests. The attrition rate was 18% in 1967 and 17% in 1979. In 1967, there were equal numbers, 156, of boys and girls and in the 1979 sample there were 183 boys and 194 girls.

The data were examined separately for each of the two dependent variables in order to answer four main questions:

1. Does sex-typed material affect the expressed reading interests of grade five boys and of grade five girls?

2. Are the effects of sex-typed reading material on grade five children's expressed reading interests similar in 1979 and in 1967?

3. Does sex-typed material affect the reading comprehension of grade five boys and of grade five girls?

4. Are the effects of sex-typed reading material on grade five children's reading comprehension similar in 1979 and in 1967?

Abbreviations used in ANOVA tables are:

S = Sex of the reader (boys, girls)

T = Time (1967 and 1979)

O = Occupation of main character (pilot, dancer)

M = Sex of main character (male, female)

The Interest Measure

The interest ratings were analyzed to ascertain the effect of sex-typed reading materials on boys and girls for both years of the study. Comparisons were made to determine the similarities and differences in reading interests of the 1967 children and the 1979 children.

The analysis of variance presented in Table II reveals significant main effects, first order interactions and second order interactions. The Scheffé test was used to determine where the significant differences lay within the interactions. The results are analyzed for each interaction level.

Second-order Interaction

There were two three-way interactions for the interest factor: these

Table II: ANOVA Table for interest measure.

Source	df	MS	F	P
S	1	114.38	36.72	.000*
T	1	27.66	8.88	.003*
ST	1	5.39	1.73	.189
Error	685	3.11		
O	1	477.87	291.08	.000*
OS	1	705.64	429.82	.000*
OT	1	4.37	2.66	.103
OST	1	20.28	12.35	.001*
Error	685	1.64		
M	1	3.75	4.25	.039*
MS.	1	100.76	114.36	.000*
MT	1	4.00	4.54	.033*
MST	1	0.46	0.53	.469
Error	685	0.88		
OM	1	0.189	0.22	.638
OMS	1	7.141	8.36	.004*
OMT	1	0.879	1.03	.311
OMST	1	0.579	0.68	.411
Error	685	0.854		

*$p < .05$

S = sex of reader
T = time
O = occupation of main character
M = sex of main character

were occupation(o) x sex of reader(s) x time(t), and occupation(o) x sex of main character(m) x sex of reader(s).

The OST interaction. The OST interaction statistics and relationships are shown in Table III and Figure 3. They demonstrate that there were differences in interests between boys and girls and for boys for occupation types but that the time interaction is between sexes and not within sexes.

Specifically, boys rated pilot content similarly in 1967 and 1979 ($F = 2.36$, $p > .05$) and rated dancer content similarly in both years ($F = .01$, $p > .05$). Boys rated pilot content higher than dancer content in both 1967 ($F = 35$, $p \leq .01$) and in 1979 ($F = 20$, $p \leq .01$).

There were no differences in girls ratings of occupation types, nor of ratings across time. Girls rated pilot stories similarly in both years ($F = .003$, $p > .05$) and rated dancer stories similarly in both years ($F = .35$, $p > .05$). Girls rated pilot and dancer stories similarly to one another in both 1967 ($F = .57$, $p > .05$) and in 1979 ($F = .05$, $p > .05$).

Girls' ratings of pilot stories were different from that of boys in 1967 ($F = 5.4$, $p \leq .05$) but not in 1979 ($F = .86$, $p > .05$). Girls' rating of dancer stories was different from that of boys in both 1967 ($F = 17.9$, $p \leq .01$) and 1979 ($F = 14.1$, $p \leq .01$).

Thus the distribution of scores predicted by Klein's study was replicated in the 1979 study: girls and boys rated sex-typed reading material differently. Boys, in 1979 as in 1967, showed a marked preference for pilot stories rather than dancer stories, while girls in both years appeared to be unaffected by the occupational role of the main

Table III: Interest: OST Interaction - cell means and differences.

	BT_1	BT_2	GT_1	GT_2
D	3.00	2.96	4.51	4.3
P	5.11	4.56	4.24	4.22

B = boys
G = girls
D = dancer
P = pilot
T_1 = 1967
T_2 = 1979

	BDT_2	GDT_1	GDT_2	BPT_1	BPT_2	GPT_1	GPT_2
BDT_1	.04	1.51*	1.3*	2.11*	1.56*	1.24*	1.22*
BDT_2		1.55*	1.34*	2.15*	1.6*	1.28*	1.26*
GDT_1			.21	.50	.05	.27	.29
GDT_2				.83*	.26	.06	.08
BPT_1					.55	.87*	.91*
BPT_2						.31	.33
GPT_1							.02

*P<.05

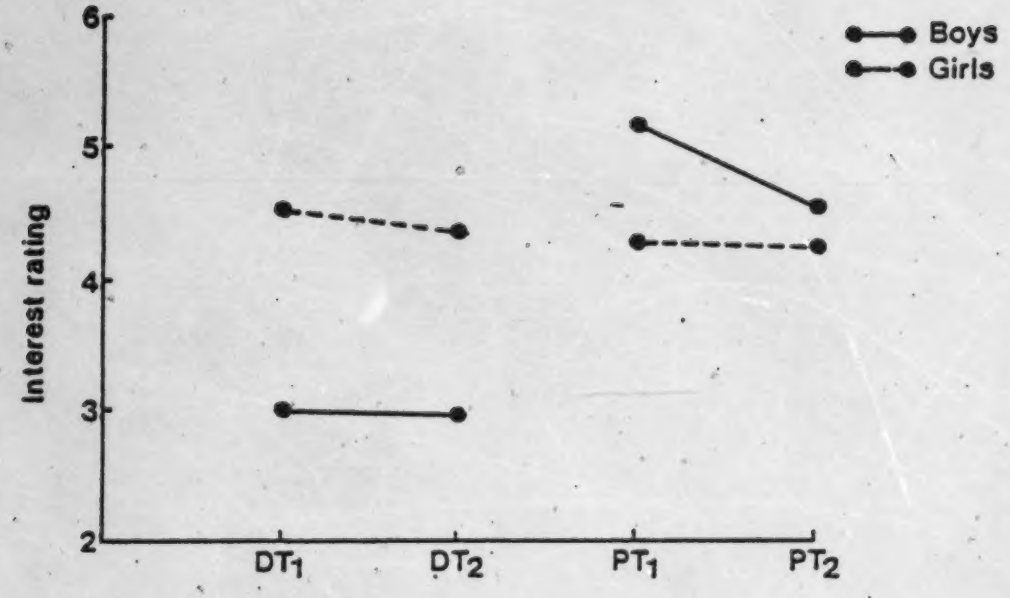

Figure 3: Interest: OST Interaction.

Table IV: Interest: OMS Interaction-cell means and differences.

	BD	BP	GD	GP
M	3.08	5.04	4.22	3.96
F	2.88	4.62	4.59	4.49

B = boys
G = girls
D = dancer
P = pilot
M = male charcter
F = female character

	BMP	GMD	GMP	BFD	BFP	GFD	GFP
BMD	1.96*	1.14*	.88*	.2	1.54*	1.51*	1.41*
BMP		.82*	1.08*	2.16*	.42*	.45*	.55*
GMD			.26	1.34*	.4	.37	.27
GMP				1.08*	.66*	.63*	.53*
BFD					1.74*	1.71*	1.61*
BFP						.03	.13
GFD							.1

*$p < .05$

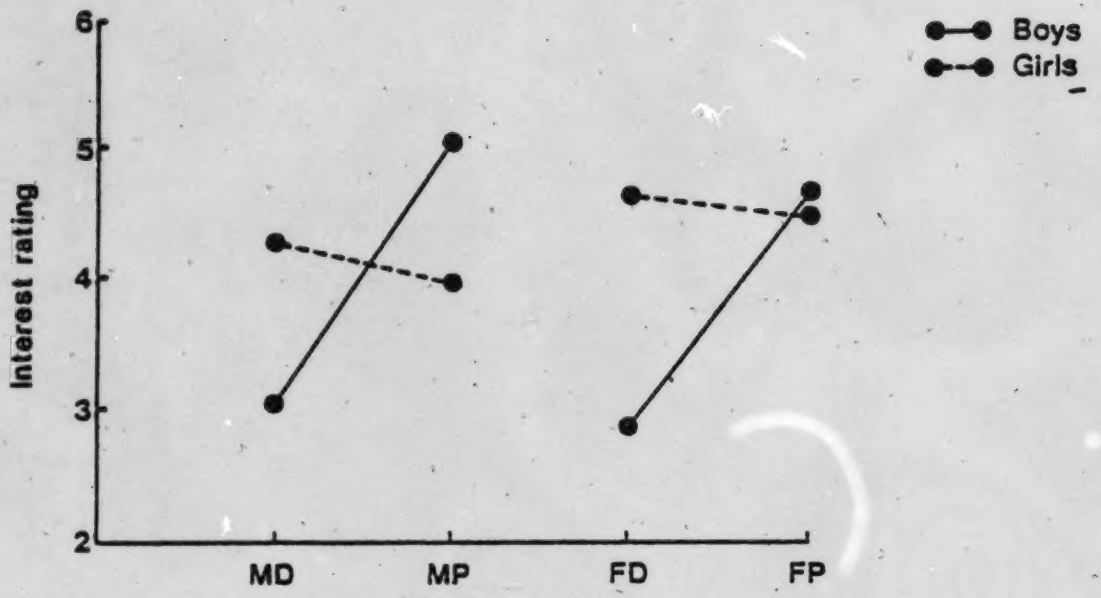

Figure 4: Interest: OMS Interaction.

character in the reading material.

The OMS interaction. The OMS interaction statistics and relationships are shown in Table IV and Figure 4. Boys had a stronger preference for the male pilot stories than the female pilot stories ($F = 4.9$, $p \leq .05$) but there was no significant difference between their rating of dancer stories with a female main character and those with a male main character ($F = 1.1$, $p > .05$).

Girls preferred female main characters to male main characters when they read pilot stories ($F = 8.4$, $p \leq .01$) but showed no preferences for male or female characters when they read the dancer stories ($F = 3.8$, $p > .05$).

First-order Interactions

There were three two-way interactions for the interest measure. These were occupation x sex of the reader (OS), sex of the main character x sex of the reader (MS) and sex of the main character x time (MT).

The OS interaction. The OS interaction statistics and relationships are shown in Table V and Figure 5. Boys preferred the pilot content to the dancer content ($F = 114$, $p \leq .01$) but girls demonstrated no preferences for one occupation type over the other ($F = .96$, $p > .05$).

The MS interaction. The MS interaction is shown in Table VI and Figure 6. Boys preferred male main characters to female main characters ($F = 4.8$, $p \leq .05$) and girls preferred female to male main characters ($F = 10.58$, $p \leq .01$). Girls liked female main characters more than the boys did ($F = 31.2$, $p \leq .01$) but there was no significant difference between the girls' liking for male main characters and boys' liking for

Table V: Interest: OS Interaction – cell means and differences.

	B	G
D	2.98	4.40
P	4.83	4.23

	DG	PB	PG.
DB	1.42*	1.85*	1.25*
DG		.43*	.17
PB			.43*

*p < .05

B = boys

G = girls

D = dancer

P = pilot

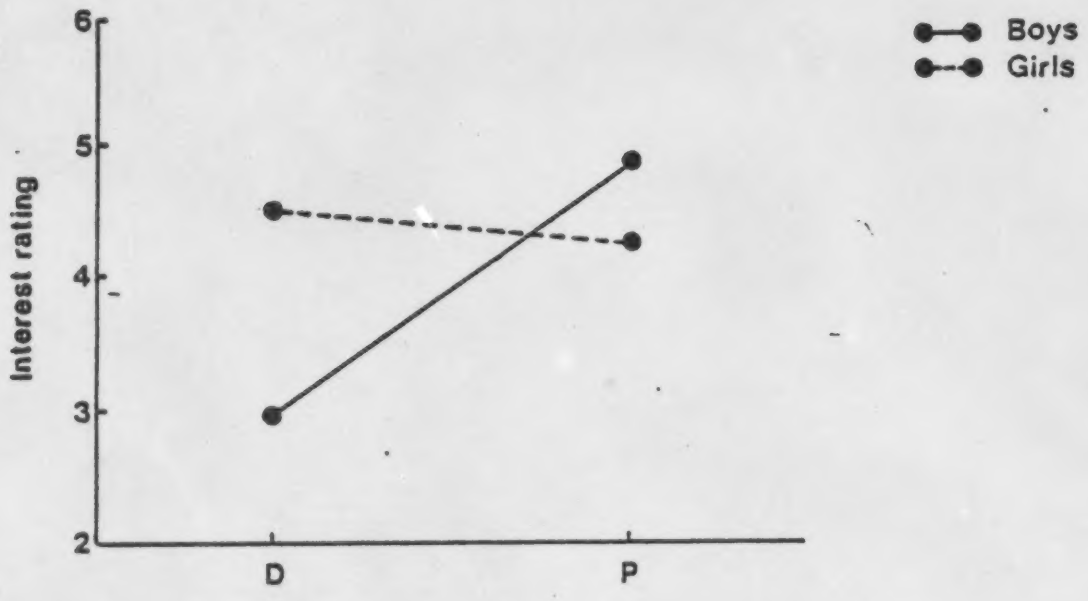

Figure 5: Interest: OS Interaction.

Table VI: Interest: MS Interaction - cell means and differences.

	B	G
M	4.06	4.08
F	3.75	4.54

	MG	FB	FG
MB	.02	.31*	.48*
MG		.33*	.46*
FB			.79*

*p < .05

B = boys

G = girls

M = male character

F = female character

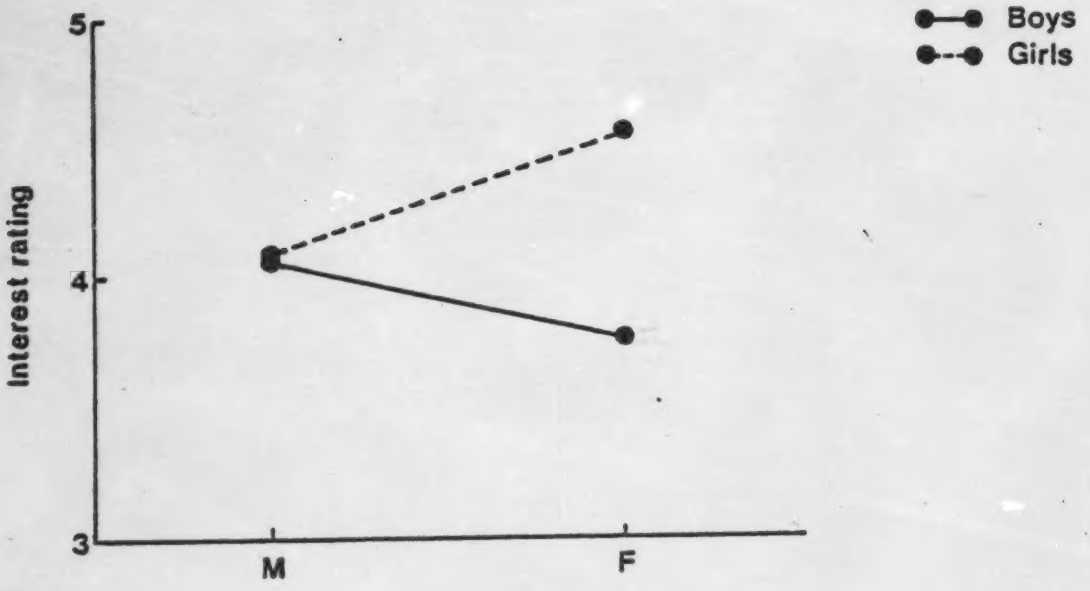

Figure 6: Interest: MS Interaction.

Table VII: Interest: MT Interaction–cell means and differences.

	T_1	T_2
M	4.13	4.01
F	4.29	4.01

	MT_2	FT_1	FT_2
MT_1	.12	.16	.12
MT_2		.28*	0
FT_1			.28*

*$p < .05$

M = male character

F = female character

T_1 = 1967

T_2 = 1979

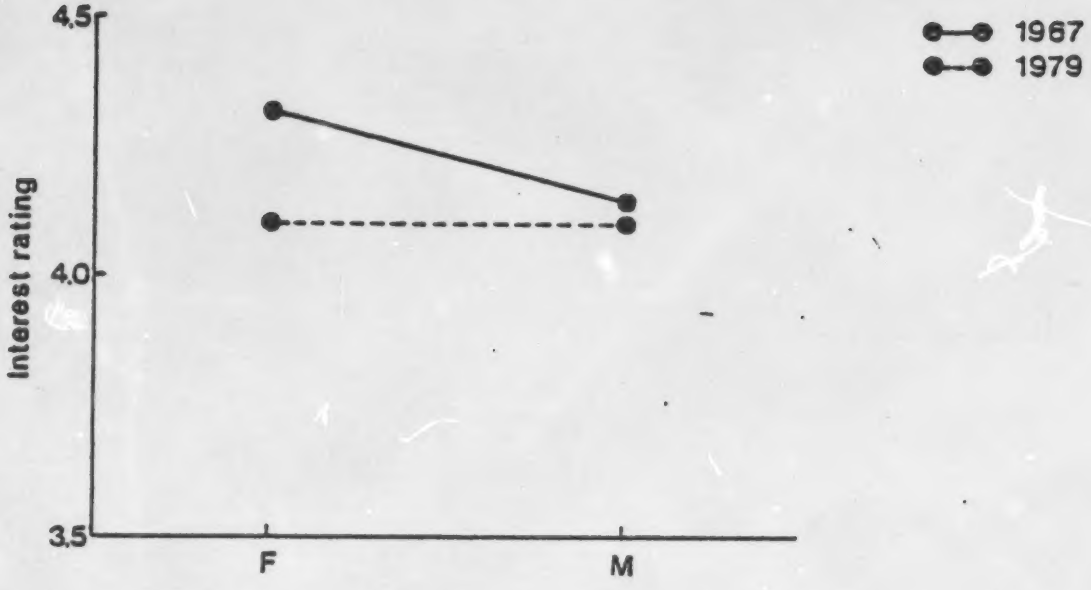

Figure 7: Interest: MT Interaction.

male main characters ($F = .02$, $p > .05$).

The MT interaction. The MT interaction is shown in Table VII and Figure 7. The rating for female characters was lower in 1979 than in 1967 ($F = 3.92$, $p \leq .05$) but the ratings for male characters in 1979 and 1967 were similar ($F = .72$, $p > .05$). There were no significant differences between the ratings of male and female characters in 1967 ($F = 1.28$, $p > .05$) and in 1979 ($F = 0$, $p > .05$).

Main Effects

All four variables in this study exerted an effect on the reading interests of the subjects.

Time: the 1967 subjects expressed a stronger liking for the reading material than did the 1979 subjects ($F = 8.88$, $p \leq .01$).

Sex of reader: girls expressed a stronger liking for the reading material than did the boys ($F = 36.72$, $p \leq .01$).

Occupation of main character: the subjects preferred the pilot content to the dancer content ($F = 291.1$, $p \leq .01$).

Sex of main character: the subjects preferred the female main character to the male main character ($F = 4.25$, $p \leq .05$).

Comprehension Measure

The distribution of comprehension scores were analyzed to determine the effect of sex-typed reading materials on the comprehension of boys and girls. The distribution of scores for 1967 and for 1979 were compared to ascertain the similarities and differences between children's comprehension in 1967 and that of 1979.

The analysis of variance presented in Table VIII shows significant

Table VIII: ANOVA Table for comprehension measure (S) sex of reader, (M) sex of main character, (O) occupation of main character, (T) time.

Source	df	MS	F	P
S	1	104.50	0.60	.441
T	1	3142.81	17.91	.000*
ST	1	99.43	0.57	.452
Error	685	175.5		
O	1	1655.67	106.41	.000*
OS	1	1501.58	96.51	.000*
OT	1	5.86	0.38	.540
OST	1	64.97	4.18	.041*
Error	685	15.56		
M	1	33.69	2.37	.124
MS	1	34.10	2.40	.121
MT	1	48.67	3.43	.065
MST	1	7.06	0.50	.481
Error	685	14.21		
OM	1	2.12	0.17	.678
OMS	1	6.45	0.53	.469
OMT	1	13.96	1.14	.286
OMST	1	0.00	0.00	.994
Error	685	12.26		

*$p < .05$

S = sex of reader
T = time
O = occupation of main character
M = sex of main character

Table IX: Comprehension: OST Interaction – cell means and differences.

	BT_1	BT_2	GT_1	GT_2
D	25.59	23.47	27.39	25.42
P	25.92	22.99	24.14	22.59

B = boys
G = girls
D = dancer
P = pilot
T_1 = 1967
T_2 = 1979

	DBT_2	DGT_1	DGT_2	PBT_1	PBT_2	PGT_1	PGT_2
DBT_1	2.13	1.8	.18	.33	2.6*	1.46	3.0*
DBT_2		3.9*	1.95	2.45*	.48	.67	.88
DGT_1			1.97	1.47	4.4*	3.25*	4.8*
DGT_2				.05	2.43*	1.28	2.83*
PBT_1					2.93*	1.78	3.33*
PBT_2						1.15	.4
PGT_1							1.55

*$p < .05$

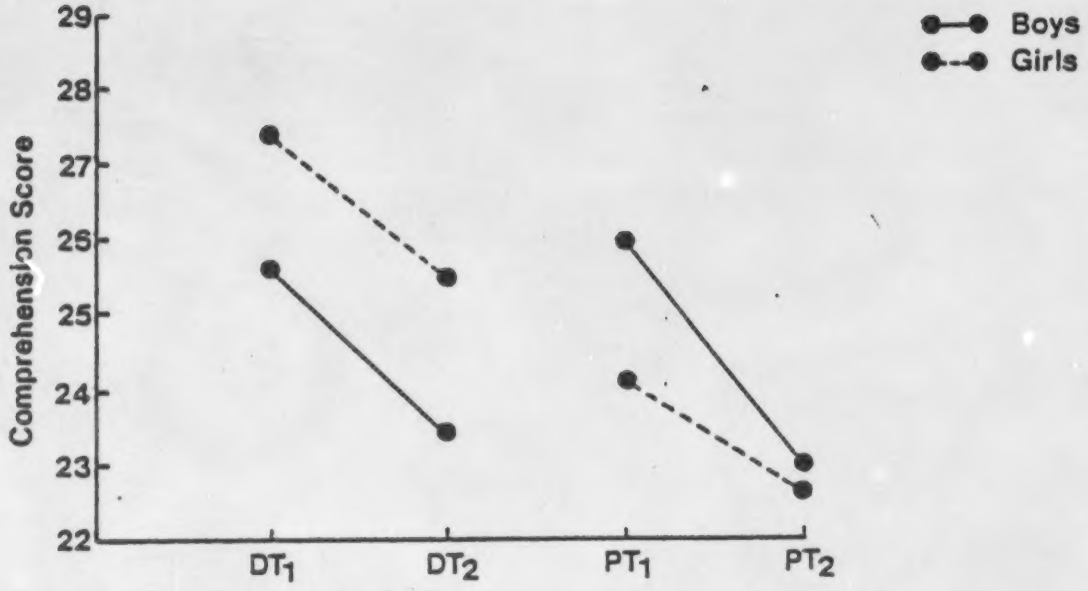

Figure 8: Comprehension: OST Interaction.

main effects, a first-order interaction and a second order interaction in relation to three variables — time, sex of the reader and occupation of the main character. The Scheffé test was used to determine where the significant differences lay within the interactions. The results are analyzed for each interaction level.

Second-order Interaction

The OST interaction. The OST interaction was the only second-order interaction for the comprehension measure. Statistics and relationships are shown in Table IX and Figure 8. These show that girls' comprehension scores were affected by occupation type and that boys were affected by time.

Specifically, girls' comprehension scores were significantly greater for the dancer stories than the pilot stories in both 1967 ($F = 9.1$, $p \leq .01$) and in 1979 ($F = 6.7$, $p \leq .05$). Boys' comprehension scores were similar for pilot and dancer stories in both 1967 ($F = .09$, $p > .05$) and in 1979 ($F = .19$, $p > .05$).

Boys' comprehension scores were affected by time; compared with 1967 boys' scores, the 1979 boys' scores were lower for pilot stories ($F = 7.2$, $p > .01$) but not for dancer stories ($F = 3.8$, $p \leq .05$). Girls' stories were similar for both pilot stories ($F = 2.2$, $p > .05$) and dancer stories ($F = 3.2$, $p > .05$).

First-order Interaction

The OS interaction. The OS interaction was the only first-order interaction for the comprehension measure. Statistics and relationships are shown in Table X and Figure 9. Comparisons between cell means showed

Table X: Comprehension: OS Interaction–cell means and differences.

	B	G
D	24.53	26.41
P	24.46	23.37

	DG	PB	PG
DB	1.88*	.07	1.16*
DG		1.95*	3.04*
PB			1.09*

* $p < .05$

B = boys

G = girls

D = dancer

P = pilot

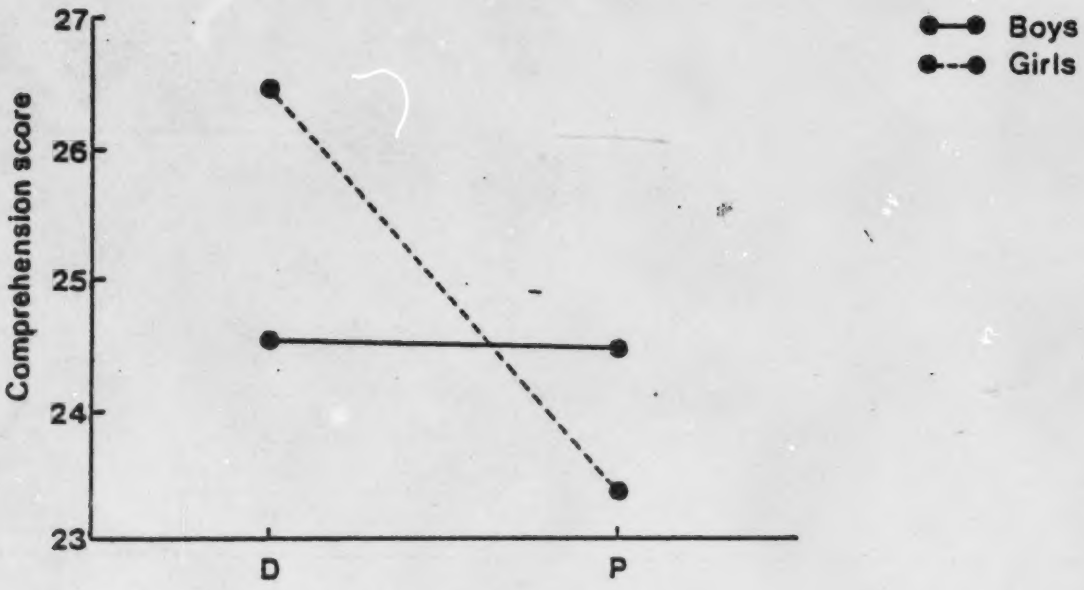

Figure 9: Comprehension: OS Interaction

that girls' comprehension of dancer stories was significantly superior to their comprehension of pilot stories ($F = 33$, $p \leq .01$) and to boys' comprehension of both dancer stories ($F = 12.6$, $p \leq .01$) and pilot stories ($F = 13.6$, $p \leq .01$). Boys' comprehension of pilot stories was superior to girls' comprehension of pilot stories ($F = 4.2$, $p \leq .05$). Even when all boys' scores from both samples were combined, no differences emerged between boys' comprehension of pilot stories and of dancer stories ($F = .02$, $p > .05$).

Main Effects

Two of the four variables in this study exerted an effect on the subjects' reading comprehension.

Time: the comprehension scores of the 1967 subjects were significantly superior to those scores of the 1979 subjects ($F = 17.91$, $p \leq .01$).

Occupation: the comprehension scores for the 1967 and 1979 subjects combined were significantly superior for the dancer content over the pilot content ($F = 106.4$, $p \leq .01$).

Discussion of Findings

The findings of this study are summarized in Tables XI and XII. They are discussed in relation to the main questions asked in this study, and in relation to the hypotheses generated from those questions.

Findings Related to Interest

The comparison of findings from 1967 and 1979 for boys' and girls' interests in sex-typed reading materials is characterized by similarity between the two years.

TABLE XI. Summary of Findings

INTEREST: Similarities between 1967 and 1979

1. Boys rated dancer stories similarly.
2. Boys rated pilot stories similarly.
3. Girls rated dancer stories similarly.
4. Girls rated pilot stories similarly.
5. Boys preferred pilot stories to dancer stories.
6. Girls had no preference for pilot or dancer stories.
7. Girls preferred female characters to male characters.
8. Boys preferred male characters to female characters.
9. Male and female characters were rated similarly to one another.
10. Boys preferred pilot stories both when the main character was male and when it was female.
11. Girls preferred dancer content to pilot content when the main characters were male.
12. Girls liked pilots and dancers equally when the main characters were female.
13. Boys' range of interest ratings was significantly greater than girls' range of interest ratings.

INTEREST: Differences between 1967 and 1979

1. The 1967 subjects expressed a stronger liking for the reading material than did the 1979 subjects.
2. In 1967 boys liked the pilot story more than the girls did but in 1979 boys and girls rated the pilot stories similarly.

In both 1967 and 1979, the effect of the occupational type of story on grade five boys was different to the effect on grade five girls: boys expressed preference for the male occupation type and comparatively less liking for the female occupation type, whereas girls' preferences were not affected by the occupational type of the main character in the reading material.

In both 1967 and 1979 the effect of the sex of the main character on grade five boys was different to the effect on grade five girls: boys preferred male characters to female characters while girls preferred female characters to male characters. Neither boys nor girls had preferences for male or female dancers, but in the male occupation-typed story girls preferred the female pilot while boys preferred the male pilot.

Thus for both years a similar pattern emerged: interests for girls were affected only by the sex of the main character while boys' interests were dichotomized by the sex-typed role of the main character in the stories. One change which did emerge was in the reduction of intensity of preference for the male occupation-typed stories by the 1979 boys. The extent to which this may be indicative of a trend away from the traditional male figure cannot be ascertained but it may be taken as an indication that boys' interests in sex-typed reading material are less stable than those of girls.

Of the hypotheses generated by the main questions in the study, three could be accepted. Firstly, the hypothesis that there would be no difference between grade five girls' interests in sex-typed reading material in 1967 and in 1979 was accepted, since no difference emerged from comparison of the distribution of girls' interests in sex-typed reading

TABLE XII. Summary of Findings

COMPREHENSION: Similarities between 1967 and 1979

1. Girls' scores for dancer stories were similar.
2. Girls' scores for pilot stories were similar.
3. Boys' scores for dancer stories were similar.
4. Girls' scores for dancer stories were greater than scores for pilot stories.
5. Boys' scores for pilot and dancer stories were similar.
6. Boys' scores for male and female characters were similar.
7. Girls' scores for male and female characters were similar.
8. Boys' total scores for all stories combined were equal to girls' total scores for all stories combined.
9. Girls' range of comprehension scores was greater than boys' range of comprehension scores.

COMPREHENSION: Differences between 1967 and 1979

1. 1979 total scores were lower than 1967 scores.
2. Boys' scores for pilot stories were lower in 1979 than in 1967.

materials for each year.

Secondly, comparison of boys' interest scores showed no significant differences in ratings between 1967 and 1979. The hypothesis that there would be no difference between grade five boys' interests in sex-typed reading material between 1967 and 1979 was accepted.

Thirdly, comparison of girls' interest scores with boys' interest scores for both years of the study showed a significantly more disparate distribution of scores for boys, determined by sex-typing in the reading material. Therefore, the hypothesis that ratings of male and female characters by grade five boys is more affected by sex-typing than ratings by girls in 1967 and in 1979 was accepted.

Findings Related to Comprehension

The comparison of findings from 1967 and 1979 for boys' and girls' comprehension of sex-typed reading materials is characterized by similarities between the two years. While the total scores for each year varied, in that 1979 scores were significantly lower than 1967 scores, the distribution of scores for story type and for boys and girls were similar.

In both 1967 and in 1979 the distribution of scores for girls' comprehension was dichotomized by story type while boys' comprehension scores appeared to be unaffected by them.

There were no significant differences between the girls' comprehension of occupation-typed stories nor between comprehension of stories with male or female characters. In both years girls' comprehension of reading material designed to appeal to them (i.e., the dancer stories) was significantly superior to their comprehension of the reading materials

designed to appeal to the boys (i.e., pilot stories). Therefore, the hypothesis that there would be no difference between grade five girls' comprehension of sex-typed material in 1967 and 1979 was accepted.

When 1967 boys' scores for different story types were compared with 1979 scores, the 1979 score for the pilot story was statistically significantly lower than the 1967 score. Therefore, the hypothesis that there would be no difference between grade five boys' comprehension of sex-typed reading materials in 1967 and 1979 was not accepted.

When all girls' scores were combined for comparison with combined boys' scores for each year, there were no differences. Therefore, the hypothesis that there would be no difference for total comprehension by grade five girls and grade five boys in both 1967 and 1979 was accepted.

In both 1967 and 1979 girls' comprehension of dancer stories was significantly superior to their comprehension of pilot stories. Therefore, the hypothesis that grade five girls' comprehension of their preferred stories would be higher than their comprehension of less preferred stories in 1967 and in 1979 was accepted.

In both 1967 and 1979 boys expressed strong preferences for pilot stories over dancer stories and yet the comprehension scores for pilot stories are not superior to those for dancer stories. Therefore the hypothesis that grade five boys' expressed interest in stories does not affect their comprehension of those stories in 1967 and in 1979 was accepted.

Chapter V

SUMMARY AND CONCLUSIONS

Review of the Study

The main purpose of this study was to determine whether children's interest in and comprehension of sex-typed reading materials were similar in 1979 to those of 1967. A study by Klein (1968) provided the data for 1967 and his study was directly replicated in 1979 to yield comparative data. 1967 data were reanalyzed together with the 1979 data.

Data for both years were collected from random samples of grade five children in the Saskatoon Public School System. Three hundred and twelve children constituted the 1967 sample and 377 comprised the 1979 sample. Each subject read four stories which were equated for readability level, length and mode. Each story had a male or female main character in either a dancer or a pilot role. Distribution of the stories was controlled so that each subject read four stories -- one with a male pilot, one with a female pilot, one with a male dancer, and one with a female dancer. Order effects were reduced by randomized distribution of materials. Each subject indicated expressed interest in each story on a six-point like-dislike scale, and completed a fifty-item cloze test for each story to measure comprehension of that story.

The focus of the study was on differences in boys' and girls' interests in the reading material and their comprehension of that material for the two years, 1967 and 1979. Klein had found that boys and girls reacted

differently in terms of interest and performed differently in terms of comprehension to sex-typed reading materials. The stability of his findings were the concern of this study.

Findings

In general, the 1979 findings replicated Klein's 1967 findings and therefore / support the validity, reliability and generalizability of those findings. The replication of findings suggests that there is some degree of stability in children's interest in and comprehension of sex-typed reading materials. Girls especially appeared to be particularly stable in their interest and comprehension patterns to the extent that there were no significant differences between the 1967 results and those of 1979.

Girls' interests in sex-typed reading materials differed from boys' interests. Boys exhibited a wider range of interest which was determined by the occupational role of the main character in the reading material; their preference was for the stories in which the characters occupied a male sex-typed role. This preference obtained whether the character was male or female. Overall the boys did prefer male characters to female characters but this was secondary to their preference based on occupational type. In contrast to this, girls had no preferences for occupational type and rated male sex-typed stories and female sex-typed stories similarly. Overall, girls preferred female characters to male characters regardless of the occupational role in which they were portrayed.

Girls' comprehension and boys' comprehension of sex-typed reading material were different. Boys' comprehension scores were uniform and consistent for all kinds of stories in this study which suggests that

their comprehension was not affected either by the sex of the main character or the role which that character occupied. In contrast to this, girls' comprehension scores were distributed over a wider range with significantly higher scores being attained for the reading material designed to appeal to the girls, i.e., the female sex-typed stories in which the main character occupied a traditionally female-held role. The sex of the main characters in the stories affected the comprehension neither of the boys nor of the girls.

The comprehension scores for the two total samples of children were significantly different, with the later group of children attaining lower scores. In both years the average comprehension scores, taken across all stories, was similar for boys and for girls.

Conclusions

Based on the findings of this study, the following conclusions can be drawn:

1. Grade five boys' interests and grade five girls' interests in sex-typed reading material are different and exhibit some stability across time.

2. Grade five boys' interests, more affected by sex-typed reading material than grade five girls' interests, are determined by the occupational role type of the main character and not by the sex of the main character.

3. Grade five girls' interests are little affected by sex-typing in reading materials although they do have a preference for female characters rather than male characters in the stories they read.

4. Grade five boys' comprehension scores are not affected by sex-

typing in reading materials but grade five girls' comprehension is favourably affected by reading material expected to be liked by girls.

5. The varying effects of sex-typed reading material on the interest and comprehension of boys and of girls suggests that the relationship between interest and comprehension is different in boys and in girls.

6. The overall comprehension of boys is similar to the overall comprehension of girls.

7. The conclusions have stability across the time period of this study.

Implications

This study lent validity and generalizability to the findings of an earlier study. In doing so, it has reduced the possibility that the earlier findings were idiosyncratic. In a field of research where many conflicting findings have emerged, the replication of findings may offer some clarifying information which could facilitate designs of more exploratory studies in this area of reading research.

The disparate distribution of interest scores for boys and for girls adds more data to support the well-established finding that boys and girls have different interests in reading. The finding that boys' interests are affected by the role of the characters in the reading material rather than by the sex of that character echoes the findings of Metz (1978) and Frasher and Frasher (1979) and suggests that boys do not reject reading material on the basis of the sex of the character as Norvell (1973) suggested.

The confirmation that girls' comprehension is affected by sex-typed reading but that boys' comprehension is not is a particularly useful

finding which supports the conclusions drawn by Henry (1969) and Bleakley (1977). Unlike those two studies where this pattern emerged only with multiple-choice tests, this study demonstrated these differences with cloze tests. Preliminary findings from a study presently in progress at the University of Saskatchewan to compare these two kinds of testing suggests that cloze tests are sufficiently sensitive to measure differences in boys' and girls' comprehension performance. The finding that girls' comprehension is affected by sex-typed reading material has direct application in that the design of reading materials for instructional, assessment and evaluation purposes should involve consideration of the impact of sex-typed content on both the interests and comprehension of grade five boys and girls.

This study has added to an understanding of the link between reading achievement and expressed reading interests in grade five boys and girls. It has helped to establish that in research addressing interest or comprehension and in which the reading material could be judged 'sex-typed,' that sex of the reader must be treated as an independent variable.

This study has supported previous studies undertaken in this part of Canada which have demonstrated that in this age group there are no differences in general comprehension of boys and of girls.

Recommendations

1. Comprehension in this study was measured by lexical cloze tests. Additional studies could be undertaken to examine the effect of sex-typed reading material when comprehension is measured by other kinds of tests, such as structural cloze tests, multiple choice tests or open-ended questions.

2. Studies are needed to determine whether the effect of sex-typed material on comprehension is similar or varies for different kinds of comprehension. Children might be more affected by sex-typed content for higher order comprehension skills such as inferential or evaluative comprehension than they are for literal comprehension.

3. This study was limited to short passages of approximately 500 words. Where reading selections are longer, a reader may develop greater involvement in preferred reading material. What then would be the effect of [illegible]nvolvement on comprehension?

This study was based on the responses of grade five children. Studies could be undertaken with different age groups to determine the impact of sex-typed reading material on the interests and comprehension of different ages of children.

5. This study used stories with a biographical narrative content in which the subjects could identify or empathize with the characters. What impact would sex-typed technical reading material have on the interests and comprehension of boys and girls?

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APPENDIX A

EQUATING THE SAMPLES FROM THE 1967 AND 1979 STUDIES

Both samples of subjects were selected by randomization of classes containing only grade 5 children in the Saskatoon Public School System. In respect of sampling procedures both samples were comparable.

In April 1967 the total number of grade five children in the Saskatoon Public School System was 1750 children, which was 11.7% of the total K-8 population of 14,978. In April 1979 the total number of grade 5 children in the Saskatoon Public School System was 1463 which constituted 10.4% of the total K-8 population of 14,126 children.

Attempts to secure descriptive data for socio-economic status for the two population groups met with difficulties. Descriptive data, particularly by small specific units, are not compiled routinely by either the municipal authorities or the education authorities in Saskatoon.

The Census of Canada (1961, 1966, 1971, 1976) yielded the most specific information. Demographic data is compiled every 5 years and socio-economic data together with demographic data is compiled every ten years (1961, 1971, etc). Therefore, the 1971 Census yielded the most current information for both the years in which the studies were made.

Saskatoon is one of thirty-two census tracted centres in Canada. Information from the census is compiled for 22 census tracts in Saskatoon. Census tracts characteristically have a population of between 2500 and 8000, are as homogenous as possible in terms of economic status and social living conditions, and have as their boundaries

permanent and easily recognized lines on the ground (Census Tracts 1976, 95-821V).

The distribution of schools in both the 1967 study and the 1979 study were plotted in their census tract areas then for each group, means were calculated for family cycle index and ranks were calculated for family incomes from the 1971 data base.

Ray (1977) gathered census tract data from the 1971 Census and the information for this comparison was extrapolated from his publication. The family-life cycle index used provided for a range of scores from 0.00 to 32.75. The mean family cycle index rating of the census tracts in which the 1967 classes were distributed was 10.21 and for the 1979 classes the mean was 10.67. The mean family cycle index for all Saskatoon was 12.24.

Ray used four family income ranks (< $8,506, $8,506-$9,851, $9,852-$11,752, $11,752 +). Of the thirteen 1967 classes, 7 classes were in areas in the first two ranks, and 6 classes were in areas in the last two ranks. Of the eighteen 1979 classes, 9 classes were in areas in the first two ranks, and 9 classes were in the last two ranks.

This information lends support to the assumption made that by following the same selection procedures comparable samples would be obtained.

An examination of changes in the Saskatoon population between the two study periods was restricted to demographic changes because of the scope of the Census for the years 1966 and 1976.

Year	Population	% growth
1961	95,564	--
1966	115,892	21
1971	126,449	9
1976	133,750	6

Saskatoon continues to enlarge in terms of housing starts and new businesses established (Board of Trade, Saskatoon, 1979). This, combined with the demographic census data, shows that both samples of children were living in communities which were expanding.

APPENDIX B

133 - ROY TRAVERS, PILOT

"I'm flying," screamed ten-year-old Roy Travers. He was riding a box on wheels over a hand-made roller coaster. Four friends built the dangerous device, but only Roy had the nerve to try it. He climbed to the top again and swooped down much faster than the first time. Roy crashed to the floor and was carried to the house.

One thing Roy thought about as much as flying was taking pictures. His father decided an expensive camera might get Roy's mind off flying. The plan almost worked. Roy became a photographer, however he used his earnings to take flying lessons and buy a plane. He often took pictures from the air and won many prizes for his work. An airplane company offered Roy a job taking pictures of jets in flight and Roy accepted.

Cruising at 40,000 feet, Roy waits until a jet flies straight toward him before shooting his pictures. Every move had been plotted before take-off by the two pilots. Nevertheless, it is always possible for something to go wrong. Roy has a split second to aim the camera, focus, and click off pictures. Then there is no time for another picture. The two planes veer away from each other to avoid a mid-air crash. When Roy lands, the films are rushed to be developed. If the pictures are good, the engineers on the ground will have valuable information about the fighter's wings.

"You never get used to flying close to another plane and taking pictures. There are too many things that can go wrong either in your plane or the other fellow's," explained Roy. "Yet," he continued, "if the airplanes are to get better, the people who build them need us in the air to take pictures."

One day, Roy was flying a new jet. Four cameras were attached to each wing. One was placed in the nose of the plane. By pressing a trigger, all cameras would take pictures at the same time.

A flight of jets was ahead. Suddenly, a voice cut through the engine roar, "Your right engine's on fire." Roy pressed the fire control button, but nothing happened. He climbed rapidly and then went into a dive to put out the fire, but it grew worse. "What are you going to do?" shouted the voice from the radio.

Roy had no time to answer. He opened the hatch and aimed the plane toward open water, then jumped. As soon as he felt he was clear, he pulled the ripcord. Roy was falling head down when the chute risers whipped him upright and then the chute opened. It worked perfectly. He looked for the plane. Suddenly there was a bright flash and the plane disappeared into a thousand pieces.

WHEN YOU HAVE FINISHED READING

1. WRITE THE STORY TITLE ON TOP OF THE SCALE PAGE.
2. As you look at each scale, think of ROY TRAVERS, PILOT and indicate what the story means to you.
3. BE SURE YOU HAVE MARKED ALL SCALES AND HAVE ONLY PUT ONE MARK ON A SCALE.
4. WORK RAPIDLY.

134 - RITA TRAVERS, PILOT

"I'm flying," screamed ten-year-old Rita Travers. She was riding a box on wheels over a hand-made roller coaster. Four friends built the dangerous device, but only Rita had the nerve to try it. She climbed to the top again and swooped down much faster then the first time. Rita crashed to the floor and was carried to the house.

One thing Rita thought about as much as flying was taking pictures. Her father decided an expensive camera might get Rita's mind off flying. The plan almost worked. Rita became a photographer, however she used her earnings to take flying lessons and buy a plane. She often took pictures from the air and won many prizes for her work. An airplane company offered Rita a job taking pictures of jets in flight and Rita accepted.

Cruising at 40,000 feet, Rita waits until a jet flies straight toward her before shooting her pictures. Every move had been plotted before take-off by the two pilots. Nevertheless, it is always possible for something to go wrong. Rita has a split second to aim the camera, focus, and click off pictures. Then there is no time for for another picture. The two planes veer away from each other to avoid a mid-air crash. When Rita lands, the films are rushed to be developed. If the pictures are good, the engineers on the ground will have valuable information about the fighter's wings.

"You never get used to flying close to another plane and taking pictures. There are too many things that can go wrong either in your plane or the other fellow's," explained Rita. "Yet," she continued, "if the airplanes are to get better, the people who build them need us in the air to take pictures."

One day, Rita was flying a new jet. Four cameras were attached to each wing. One was placed in the nose of the plane. By pressing a trigger, all cameras would take pictures at the same time.

A flight of jets was ahead. Suddenly, a voice cut through the engine roar, "Your right engine's on fire." Rita pressed the fire control button, but nothing happened. She climbed rapidly and then went into a dive to put out the fire, but it grew worse. "What are you doing?" shouted the voice from the radio.

Rita had no time to answer. She opened the hatch and aimed the plane toward open water, then jumped. As soon as she felt she was clear, she pulled the ripcord. Rita was falling head down when the chute risers whipped her upright and then the chute opened. It worked perfectly. She looked for the plane. Suddenly there was a bright flash and the plane disappeared into a thousand pieces.

WHEN YOU HAVE FINISHED READING

1. WRITE THE STORY TITLE ON TOP OF THE SCALE PAGE.
2. As you look at each scale, think of RITA TRAVERS, PILOT and indicate what the story means to you.
3. BE SURE YOU HAVE MARKED ALL SCALES AND HAVE ONLY PUT ONE MARK ON A SCALE.
4. WORK RAPIDLY.

123 - LAWRENCE PETIT, BALLET DANCER

The "Chez Petit" was a small restaurant in the middle of Paris. It was famous for two things--its onion soup and a small boy named Lawrence Petit who wore a pair of ballet slippers several sizes too big for him. Each evening he danced and clowned around the restaurant. People enjoyed watching Lawrence and threw coins for him to gather.

Lawrence had been surrounded by dancing and talk of dancing from the time he was born. His father had been a ballet dancer and his mother was a modern dancer.

From the day Lawrence's mother brought home a pair of ballet slippers, his feet were never still. He made up new dances every day and tried them out every night at the restaurant. His father was afraid at first that patrons would be annoyed. He soon found out that Lawrence's dancing was actually bringing in new customers.

When Lawrence was seventeen, he surprised his family by announcing that he was going to become a doctor. Meanwhile, he landed a summer job as a chorus boy in a Paris night club. By the time school started in the fall, Lawrence made up his mind to become a dancer.

The kind of dancing he wanted was ballet. He picked one of the best teachers and continued to work to pay for his lessons. After several months of study he began to dance with the "Young Ballet".

Lawrence was very busy. In the mornings he took lessons. In the afternoon he rehearsed for his job and also with the Young Ballet group. Finally, in the evening he gave his performance. Some nights he danced twice, once, in the ballet theatre and then at the night club.

When he was eighteen, Lawrence joined the Lyon Ballet. He was given his first solo, that of a deer. In the morning of the opening, someone discovered that no one had made a costume for the deer. All that day, Lawrence rehearsed while being fitted. The last stitch was sewn just before he went on stage to dance. "As soon as I got out on the stage, I felt I could dance all night," he said, "but, up to that moment, I had one wish--that I was in medical school."

At nineteen, Lawrence joined a touring company going to the United States. In New York City, reviewers called his dancing "unforgettable". He was homesick, and though his salary was doubled, he returned to Paris.

In Paris he and twelve young people rented a theatre to perform their own ballets. People jammed the theatre, but the group needed more money to continue.

WHEN YOU HAVE FINISHED READING

1. WRITE THE STORY TITLE ON TOP OF THE SCALE PAGE.
2. As you look at each scale, think of LAWRENCE PETIT, BALLET DANCER and indicate what the story means to you.
3. BE SURE YOU HAVE MARKED ALL SCALES AND HAVE ONLY PUT ONE MARK ON A SCALE.
4. WORK RAPIDLY.

124 - LINDA PETIT, BALLET DANCER

The "Chez Petit" was a small restaurant in the middle of Paris. It was famous for two things--its onion soup and a small girl named Linda Petit who wore a pair of ballet slippers several sizes too big for her. Each evening she danced and clowned around the restaurant. People enjoyed watching Linda and threw coins for her to gather.

Linda had been surrounded by dancing and talk of dancing from the time she was born. Her father had been a ballet dancer and her mother was a modern dancer.

From the day Linda's mother brought home a pair of ballet slippers, her feet were never still. She made up new dances every day and tried them out every night at the restaurant. Her father was afraid at first that patrons would be annoyed. He soon found out that Linda's dancing was actually bringing in new customers.

When Linda was seventeen, she surprised her family by announcing that she was going to become a doctor. Meanwhile, she landed a summer job as a chorus girl in a Paris night club. By the time school started in the fall, Linda made up her mind to become a dancer.

The kind of dancing she wanted was ballet. She picked one of the best teachers and continued to work to pay for her lessons. After several months of study she began to dance with the "Young Ballet".

Linda was very busy. In the mornings she took lessons. In the afternoon she rehearsed for her job and also with the Young Ballet group. Finally, in the evening she gave her performance. Some nights she danced twice, once, in the ballet theatre and then at the night club.

When she was eighteen, Linda joined the Lyon Ballet. She was given her first solo, that of a deer. In the morning of the opening, someone discovered that no one had made a costume for the deer. All that day, Linda rehearsed while being fitted. The last stitch was sewn just before she went on stage to dance. "As soon as I got out on the stage, I felt I could dance all night," she said, "but, up to that moment, I had one wish--that I was in medical school."

At nineteen, Linda joined a touring company going to the United States. In New York City, reviewers called her dancing "unforgettable". She was homesick, and though her salary was doubled, she returned to Paris.

In Paris she and twelve young people rented a theatre to perform their own ballets. People jammed the theatre, but the group needed more money to continue.

WHEN YOU HAVE FINISHED READING

1. WRITE THE STORY TITLE ON TOP OF THE SCALE PAGE.
2. As you look at each scale, think of LINDA PETIT, BALLET DANCER and indicate what the story means to you.
3. BE SURE YOU HAVE MARKED ALL SCALES AND HAVE ONLY PUT ONE MARK ON A SCALE.
4. WORK RAPIDLY.

132 - DEBBIE SHELDON, PILOT

Debbie Sheldon is Alaska's most famous bush pilot. In the roadless wilderness that is the center of Alaska, Debbie's plane is a taxi, the railroad, and often an ambulance. Trappers, miners, and homesteaders depend on Debbie for supplies and to get in and out of the country.

"There isn't a better pilot in the world," say all of Debbie's friends. She can take-off from a cow pasture with a full load of eggs or dynamite. An hour later she will airdrop a case of eggs or the dynamite within fifty feet of a marked spot. Not an egg is ever broken and needless to say nobody has been blown-up. "I'll bet," a pilot said, Debbie could land her plane on the back of a whale floating on the surface."

Debbie works a long day. It begins very early. On the first trip she usually takes a passenger or two ninety bumpy miles down river to Anchorage. There she finds a load of cargo which she puts on the plane.

She flies back north with the cargo for a construction camp seventy-five miles from the city. She lands the plane and it is unloaded. Quickly she takes-off to deliver gasoline and pick up a sick man to bring to Anchorage's hospital. She buys a supply of chewing tobacco for a miner which she drops on the way back home.

To know Debbie, you must fly with her. I went on a flight one day to pick up some mountain climbers atop Mount McKinley, North America's highest peak. McKinley is nearly four miles high. People come from all over the world to climb it and Debbie flies most of them to and from the slopes.

For this flight, Debbie uses a small airplane with skiis to land in the snow. We take-off and a minute later Debbie throws the plane into a stomach upsetting sharp bank. Suddenly, Debbie points to a silver glitter and explains, "Plane fell apart in mid-air and crashed there a few years back killing everyone. This little plane will stand up to anything nature offers, but there are problems. I may fall asleep. The engine may fail and you've no place to land. You aim between the two tallest trees around and let the plane try to keep together by itself. First the wings tear off, then the landing gear, and before anything happens to the fuselage, you stop—you hope. Then you begin to pray you're found before you freeze to death."

Suddenly the plane was in a whiteout. It was like flying in a bottle of milk. Quickly the air cleared and Debbie looked troubled. The mountain could be in a bad mood.

WHEN YOU HAVE FINISHED READING

1. WRITE THE STORY TITLE ON TOP OF THE SCALE PAGE.
2. As you look at each scale, think of DEBBIE SHELDON, PILOT and indicate what the story means to you.
3. BE SURE YOU HAVE MARKED ALL SCALES AND HAVE ONLY PUT ONE MARK ON A SCALE.
4. WORK RAPIDLY.

121 - ARNOLD BANKS, BALLET DANCER

Arnold Banks' father was a famous playwright. Arnold had no other plans for his life than to act in his father's plays. However, he changed his mind when he saw his first ballet. "I want to take ballet lessons," he told his mother. His mother refused to arrange lessons. She explained that rigid ballet training made machines of people.

Arnold decided, "If I cannot take ballet, I will read everything I can find about ballet." He collected pictures of famous dancers. He danced to records, making up steps of his own. When he read that a certain dancer advised running over hills barefoot, he tried it, but ended up with cut feet from broken glass.

Arnold's lessons came in an unexpected way. His brother, Sam, was suffering from fallen arches. To strengthen his feet, the doctor advised Mrs. Banks "Sam should take ballet." Mr. Banks argued with his wife that if Sam took ballet, they might as well let Arnold take lessons too.

Both Arnold and Sam were taken to Popov's Dance School. Popov looked at Arnold and said, "You are too heavy. You have weak knees and stand very poorly. You are a little old to start ballet." Nevertheless, Popov accepted Arnold in his school.

Books did not prepare Arnold for the hard work ahead. He was completely surprised by aches and pains and how tired he would always feel. The mirror showed him that his legs were too short. "You'll never be a dancer," insisted Popov.

Arnold attended ballets often. He studied what he wanted to do in his own dancing. "I will be a dancer," Arnold promised himself. To prove Popov wrong, he practiced harder and longer which worried his parents and they sent him to England.

He decided to stay in London where he created a ballet for himself called "Rodeo". "Rodeo" is a love story set in the American Southwest. It centers around a cowboy. With the odds against him he fights for his love and the ranch his father left him. He seems to be failing, but in the end wins both. In the ballet there is a great deal of riding, roping, and square dancing.

When the ballet opened in New York City, everything seemd to go wrong. Steps were missed. Some of the girls clapped offbeat. As the curtains closed, Arnold began sneezing from the dust. "How many mistakes can happen in one evening?' he wondered.

The audience didn't seem to notice what went wrong. They enjoyed the ballet and their applause resulted in twenty-two curtain calls. However, not all the newspaper writers were as pleased and Arnold still had to prove to them he was a dancer.

WHEN YOU HAVE FINISHED READING

1. WRITE THE STORY TITLE ON TOP OF THE SCALE PAGE.
2. As you look at each scale, think of ARNOLD BANKS, BALLET DANCER and indicate what the story means to you.
3. BE SURE YOU HAVE MARKED ALL SCALES AND HAVE ONLY PUT ONE MARK ON A SCALE.
4. WORK RAPIDLY.

APPENDIX C

TABLE XIII

STORY READABILITY

	DALE-CHALL[a]			FRY[b]
	Readability	Total Words	Total Sentences	Unfamiliar Words[c]	
Arnold Banks, Ballet Dancer Ann Banks, Ballet DAncer	5.6	440	43	30	6/7
Lawrence Petit, Bellet Dancer Linda Petit, Ballet Dancer	5.4	436	34	22	6/7
Don Sheldon, Pilot Debbie Sheldon, Pilot	5.3	449	38	18	6/7
Roy Travers, Pilot Rita Travers, Pilot	5.2	454	39	19	6

(a) based on 3 samples of 100 or more words

(b) based on 3 samples of 100 words

(c) total unfamiliar words in 3 samples, based on Dale-Chall 3000 word list

Table compiled from Lein (1968) p. 62, and Metz (1978) p. 23.

APPENDIX D

132

DEBBIE SHELDON, PILOT

Debbie Sheldon is Alaska's most famous bush pilot. In the roadless wilderness that is the center of Alaska, Debbie's plane is a taxi, the railroad, and often an ambulance. Trappers, miners, and homesteaders depend on Debbie for supplies and to get in and out of the country.

"There __(1)__ a better pilot in the world," __(2)__ all of Debbie's friends. She can __(3)__ from a cow pasture with a __(4)__ load of eggs or dynamite. An __(5)__ later, she will air-drop a case __(6)__ eggs or the dynamite within fifty __(7)__ of a marked spot. Not an __(8)__ is ever broken and, needless to __(9)__, nobody has been blown-up. "I'll bet," __(10)__ pilot said, "Debbie could land her __(11)__ on the back of a whale __(12)__ on the surface."

Debbie works a __(13)__ day. It begins very early. On __(14)__ first trip she usually takes a __(15)__ or two ninety bumpy miles down __(16)__ to Anchorage. There she finds a __(17)__ of cargo which she puts on __(18)__ plane.

She flies back north with __(19)__ cargo for a construction camp seventy-five __(20)__ from the city. She lands the __(21)__ and it is unloaded. Quickly she __(22)__ to deliver gasoline and pick up __(23)__ sick man to bring to Anchorage's __(24)__. She buys a supply of chewing __(25)__ for a miner which she drops __(26)__ the way back home.

To know __(27)__, you must fly with her. I __(28)__ on a flight one day to __(29)__ up some mountain climbers atop Mount __(30)__, North America's highest peak. McKinley is __(31)__ four miles high. People come from __(32)__ over the world to climb it __(33)__ Debbie flies most of them to __(34)__ from the slopes.

For this flight __(35)__ uses a small airplane with skis __(36)__ land in the snows. We take-off __(37)__ a minute later Debbie throws the __(38)__ into a stomach upsetting sharp bank. __(39)__, Debbie points to a silver glitter __(40)__ explains, "Plane fell apart in mid-air __(41)__ crashed there a few years back, __(42)__ everyone. This little plane will stand __(43)__ to anything nature offers, but there __(44)__ problems. I may fall asleep. The __(45)__ may fail and you've no place __(46)__ land. You aim between the two __(47)__ trees around and let the plane __(48)__ to keep together by itself. First, __(49)__ wings tear off, then the landing __(50)__, and before anything happens to the fuselage, you stop—you hope. Then you begin to pray you're found before you freeze to death."

DID YOU ANSWER ALL THE QUESTIONS.....WHY NOT CHECK YOUR WORK?

134

RITA TRAVERS, PILOT

"I'm flying," screamed ten-year-old Rita Travers. She was riding a box on wheels over a hand-made roller coaster. Four friends built the dangerous device, but only Rita had the nerve to try it. She climbed to the top again and swooped down much faster than the first time. Rita __(1)__ to the floor and was carried __(2)__ the house.

One thing Rita thought __(3)__ as much as flying was taking __(4)__ . Her father decided an expensive camera __(5)__ get Rita's mind off flying. The __(6)__ almost worked. Rita became a photographer; __(7)__ , she used her earnings to take __(8)__ lessons and buy a plane. She __(9)__ took pictures from the air and __(10)__ many prizes for her work. An __(11)__ company offered Rita a job taking __(12)__ of jets in flight and Rita __(13)__.

Cruising at 40,000 feet, Rita waits __(14)__ a jet flies straight toward her __(15)__ shooting her pictures. Every move had __(16)__ plotted before take-off by the two __(17)__. Nevertheless, it is always possible for __(18)__ to go wrong. Rita has __(19)__ second to aim the camera, focus, __(20)__ click off pictures. Then there is __(21)__ time for another picture. The two __(22)__ veer away from each other to __(23)__ mid-air crash. When Rita lands, __(24)__ films are rushed to be developed. __(25)__ the pictures are good, the engineers __(26)__ the ground will have valuable information __(27)__ the fighter's wings.

"You never get __(28)__ to flying close to another plane __(29)__ taking pictures. There are many things __(30)__ can go wrong either in your __(31)__ or the other fellow's," explained Rita. "__(32)__." she continued "if airplanes are to __(33)__ better, the people who build them __(34)__ us in the air to take __(35)__."

One day, Rita was flying a __(36)__ jet. Four cameras were attached to __(37)__ wing. One was placed in the __(38)__ of the plane. By pressing a __(39)__, all cameras would take pictures at __(40)__ same time.

A flight of jets __(41)__ ahead. Suddenly, a voice cut through __(42)__ engine roar, "Your right engine's on __(43)__." Rita pressed the fire control button, __(44)__ nothing happened. She climbed rapidly and __(45)__ went into a dive to put __(46)__ the fire, but it grew worse. "__(47)__ are you doing?" shouted the voice __(48)__ the radio.

Rita had no time __(49)__ answer. She opened the hatch and __(50)__ the plane toward open water; then jumped. As soon as she felt she was clear, she pulled the ripcord.

DID YOU ANSWER ALL THE QUESTIONS.....WHY NOT CHECK YOUR WORK?

121

ARNOLD BANKS, BALLET DANCER

Arnold Banks' father was a famous playwright. Arnold had no other plans for his life than to act in his father's plays. However, he changed his mind when he saw his first ballet. "I want to take ballet lessons," he told his mother. His __(1)__ refused to arrange lessons. She explained __(2)__ rigid ballet training made machines of __(3)__.

Arnold decided, "If I cannot take __(4)__, I will read everything I can __(5)__ about ballet." He collected pictures of __(6)__ dancers. He danced to records, making __(7)__ steps of his own. When he __(8)__ that a certain dancer advised running __(9)__ hills, barefoot, he tried it, but __(10)__ up with cut feet from broken __(11)__.

Arnold's lessons came in an unexpected __(12)__. His brother Sam was suffering from __(13)__ arches. To strengthen his feet, the __(14)__ advised Mrs. Banks, "Sam should take __(15)__." Mr. Banks argued with his wife __(16)__ if Sam took ballet, they might __(17)__ well let Arnold take lessons too.

__(18)__ Arnold and Sam were taken to __(19)__ Dance School. Popov looked at Arnold __(20)__ said, "You are too heavy. You __(21)__ weak knees and stand very poorly. __(22)__ are a little old to start __(23)__." Nevertheless, Popov accepted Arnold in his __(24)__.

Books did not prepare Arnold for __(25)__ hard work ahead. He was completely __(26)__ by aches and pains and how __(27)__ he would always feel. The mirror __(28)__ him that his legs were too __(29)__. "You'll never be a dancer," insisted __(30)__.

Arnold attended ballets often. He studied __(31)__ he wanted to do in his __(32)__ dancing. "I will be a dancer," __(33)__ promised himself. To prove Popov wrong __(34)__ practiced harder and longer which worried __(35)__ parents and they sent him to __(36)__.

He decided to stay in London __(37)__ he created a ballet for himself __(38)__ "Rodeo". "Rodeo" is a love story __(39)__ in the American Southwest. It centers __(40)__ a cowboy. With the odds against __(41)__, he fights for his love and __(42)__ ranch his father left him. He __(43)__ to be failing, but in the __(44)__ wins both. In the ballet there __(45)__ a great deal of riding, roping __(46)__ square dancing.

When the ballet opened __(47)__ New York City, everything seemd to __(48)__ wrong. Steps were missed. Some of __(49)__ girls clapped offbeat. As the curtains __(50)__, Arnold began sneezing from the dust. "How many mistakes can happen in one evening?" he wondered.

DID YOU ANSWER ALL QUESTIONS.....WHY NOT CHECK YOUR WORK?

123

LAWRENCE PETIT, BALLET DANCER

The "Chez Petit" was a small restaurant in the middle of Paris. It was famous for two things--its onion soup and a small boy named Lawrence Petit who wore a pair of ballet slippers several sizes too big for him. Each __(1)__ he danced and clowned around the __(2)__ . People enjoyed watching Lawrence and threw __(3)__ for him to gather.

Lawrence had __(4)__ surrounded by dancing and talk of __(5)__ from the time he was born. __(6)__ father had been a ballet dancer __(7)__ his mother was a modern dancer.

__(8)__ the day Lawrence's mother brought home __(9)__ pair of ballet slipper, his feet __(10)__ never still. He made up new __(11)__ every day and tried them out __(12)__ night at the restaurant. His father __(13)__ afraid at first that patrons would __(14)__ annoyed. He soon found out that __(15)__ dancing was actually bringing in new __(16)__ .

When Lawrence was seventeen, he surprised __(17)__ family by announcing that he was __(18)__ to become a doctor. Meanwhile, he __(19)__ a summer job as a chorus __(20)__ in a Paris night club. By __(21)__ time school started in the fall, __(22)__ made up his mind to become __(23)__ dancer.

The kind of dancing he __(24)__ was ballet. He picked one of __(25)__ best teachers and continued to work __(26)__ pay for his lessons. After several __(27)__ of study he began to dance __(28)__ the "Young Ballet".

Lawrence was very __(29)__ . In the mornings he took lessons. __(30)__ the afternoon he rehearsed for his __(31)__ and also with the "Young Ballet" __(32)__ . Finally, in the evening he gave __(33)__ performance. Some nights he danced twice, __(34)__ , in the ballet theater and then __(35)__ the night club.

When he was __(36)__ , Lawrence joined the Lyon Ballet. He __(37)__ given his first solo, that of __(38)__ deer. In the morning of the __(39)__ , someone discovered that no one had __(40)__ a costume for the deer. All __(41)__ day, Lawrence rehearsed while being fitted. __(42)__ last stitch was sewn just before __(43)__ went on stage to dance. "As __(44)__ as I got out on the __(45)__ , I felt I could dance all __(46)__ ," he said, "but, up to that __(47)__ , I had one wish—that I __(48)__ in medical school."

At nineteen, Lawrence __(49)__ a touring company going to the __(50)__ States. In New York City, reviewers called his dancing "unforgettable".

DID YOU ANSWER ALL THE QUESTIONS.....WHY NOT CHECK YOUR ANSWERS?

Put an "X" in the box which best describes your feeling about the type of story you have just read.

- [ ] This is the type of story I LIKE to read VERY VERY MUCH.
- [ ] This is the type of story I LIKE to read VERY MUCH.
- [ ] This is the type of story I LIKE to read SOMEWHAT.
- [ ] This is the type of story I DO NOT LIKE to read SOMEWHAT.
- [ ] This is the type of story I DO NOT LIKE to read VERY MUCH.
- [ ] This is the type of story I DO NOT LIKE to read VERY VERY MUCH.

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APPENDIX E

DIRECTIONS AND INSTRUCTIONS TO CLASSES

INTRODUCTION

Hello boys and girls, my name is Dr. Klein/Mrs. Roberstson. I am from the University of Saskatchewan and I am here to find out something about what boys and girls like to read and how much they understand about what they read.

You will be reading four stories boys and girls your age may read at some time in school. First, we want you to tell us what you think of the stories. Then we want to see how much you understand about the stories. Some time next week we will try to let you know how well you did on the tests, so do your very best.

DISTRIBUTION OF MATERIALS AND COMPLETION OF PERSONAL INFORMATION

Each child is given an interest inventory and a cloze answer booklet with matched numbers.

Each of you has been given two booklets with pink or blue first pages. Please put these in front of you. YOU MAY WRITE WITH EITHER A PEN OR PENCIL.

1. Notice on top of your answer booklets there is a five digit number. Make certain that both numbers are the same. Is there anyone who has two different numbers?
2. Next, indicate which you are, a boy or girl, by circling the correct box.
3. PRINT YOUR NAME, LAST NAME, FIRST NAME on the line at the top.
4. Print the name of your school.
5. Figure out how old you are. Write the number of years you are and the number of months. Look at the screen, the chart will help you to figure the months.

Each child is given the two story booklet forms, A or B which have been previously randomized and matched in pairs. Forms A and B are handed out alternately beginning with the child sitting in the first row to the right of the researcher. The forms are distributed by sex as determined by the occupant of the starting point seat, then the opposite sex receives their forms. Note last number.

In the next class the forms are distributed in reverse order i.e. B, A, B, A, etc. WRITE ON CHALKBOARD. Colour coding. Yellow - A, and Green - B.

Please check that your yellow or green story books have the same 3-digit number your story books are colour coded. If your book is yellow, circle A on both answer booklets. If your book is green, circle B on your answer booklets.

INTEREST INVENTORY

Now let's find out what we are going to do today.

First we are going to practice criticizing a story. Listen while I read the beginning of ROGER BANNISTER, TRACK STAR.

Read story (excerpt on next page).

Distribute sample answer sheet for interest inventory. Project sample story on screen and point out that the title of the story is ROGER BANNISTER, TRACK STAR. Show children that it begins with the number 90.

Please write your title and number at the top of the page on the line. This is most important to do, and must be done after reading each story.

PROJECT SAMPLE INTEREST INVENTORY ON THE SCREEN

Think about the story I just finished reading to you. Listen now and read to yourself the statements at the top of the page as I read them to you.

Which statement best describes your feelings about the story? Put an "X" in the box next to the sentence which tells how you feel.

Call for questions.

Once it is felt that the class understand the procedures for responding to the interest scale ask the children to open their story booklets at the first story only.

You will have 3 MINUTES in which to read this story.

At the end of three minutes, turn to the first page of the interest scale booklet. Complete the title and the number of the story you have just read. You will now complete this page in the same way that you did for Roger Bannister, Track Star.

Read all Stores.

Collect completed interest scale booklets.

Collect story books.

CLOZE TEST

Each child will still have a cloze story booklet and a cloze answer booklet. Distribute practice cloze sheets, face down. Project sample cloze on the screen.

You have 20 seconds to read the story to yourself; it is the same one I have given you face down. Notice, every seventh word is missing, but you can still get the gist of the story by rapidly reading it.

(Ask someone) What is the Story about?

Who are the main characters?

Go over answers. Show how "knock" and the boys' names can be deduced by reading ahead or back.

Point out that spelling is not important. Spell bear (bare) and deer (dear).

Do you see any errors? Yes, I purposely wrote the words wrongly to show you that if you can't spell you should still try to get the answer. It makes it a great deal easier to mark if you spell the word correctly so please try to do so.

Once it is felt that the class understands the technique involved the children are asked to prepare to complete the exercises in their remaining answer booklet.

On each answer sheet there is a place for your name and school. Before answering the questions, write your name.

Fill out top portion for each story. DO NOT FORGET TO INCLUDE THE STORY NUMBER AND THE TITLE OF THE STORY.

Are there any questions? You may begin work. When you complete one test, go right on to the next.

Any booklets which are not complete at the end of the testing session will be completed (approximately within 48 hours) under the classroom teacher's supervision.

Completed booklets will be collected by the researcher, together with CTBS scores for that school.

APPENDIX F

MEAN INTEREST RATINGS

		1967	1979
Male Pilot:	Boys	5.29	4.80
	Girls	3.88	4.03
Female Pilot:	Boys	4.92	4.32
	Girls	4.59	4.40
Male Dancer:	Boys	3.07	3.08
	Girls	4.30	4.13
Female Dancer:	Boys	2.92	2.84
	Girls	4.71	4.47

		1967	1979
Male Pilot:	(Boys + Girls)	4.58	4.40
Female Pilot:	(Boys + Girls)	4.75	4.36
Male Dancer:	(Boys + Girls)	3.69	4.62
Female Dancer:	(Boys + Girls)	3.82	3.68

APPENDIX G

MEAN COMPREHENSION RAW SCORES

		1967	1979
Male Pilot:	Boys	25.86	22.91
	Girls	24.05	22.28
Female Pilot:	Boys	25.99	23.08
	Girls	24.23	22.91
Male Dancer:	Boys	25.83	23.39
	Girls	27.41	24.92
Female Dancer:	Boys	25.37	23.55
	Girls	27.38	25.92

		1967	1979
Male Pilot:	(Boys + Girls)	24.96	22.58
Female Pilot:	(Boys + Girls)	26.38	22.99
Male Dancer:	(Boys + Girls)	26.62	24.18
Female Dancer:	(Boys + Girls)	26.38	24.77